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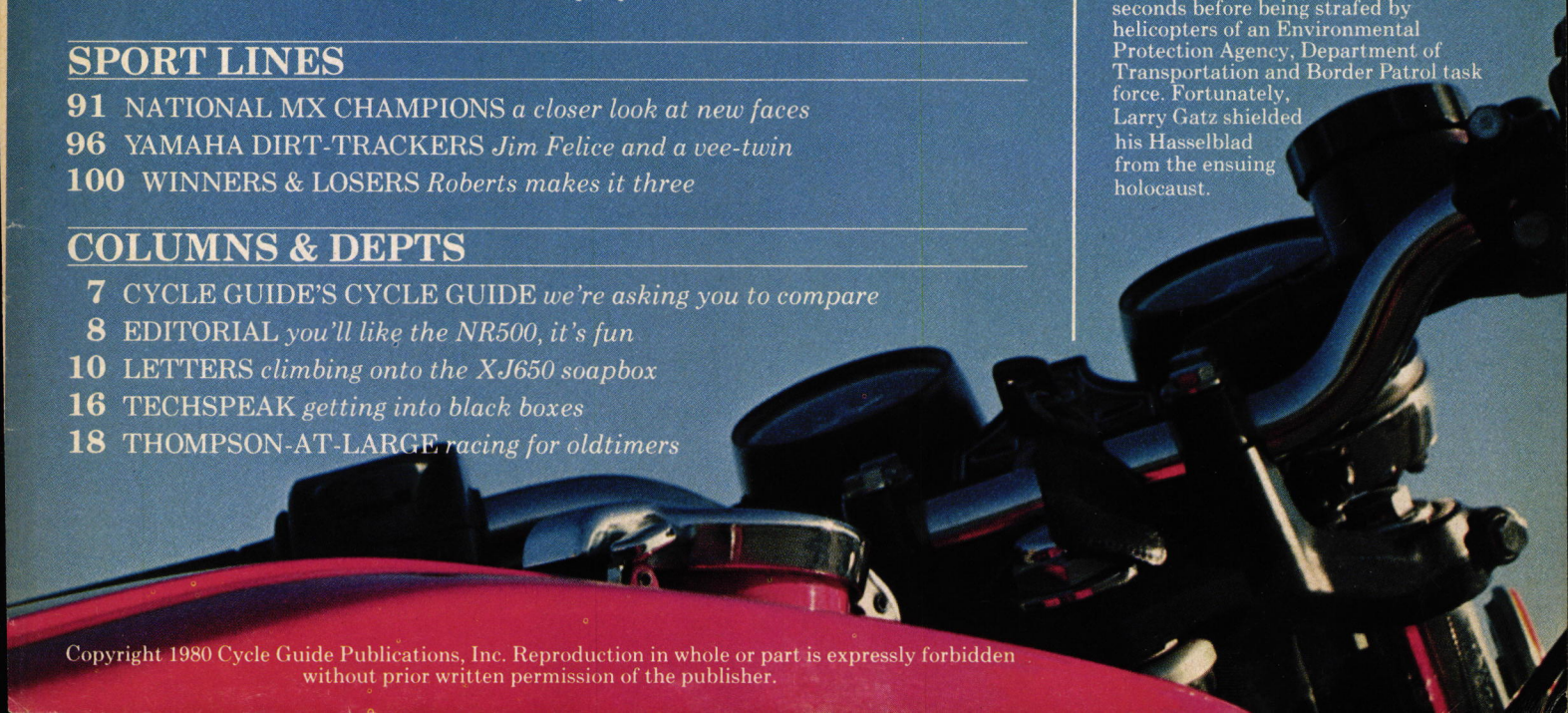
COVER:
The forbidden RD350LC poses perilously close to the open road seconds before being strafed by helicopters of an Environmental Protection Agency, Department of Transportation and Border Patrol task force. Fortunately, Larry Gatz shielded his Hasselblad from the ensuing holocaust.



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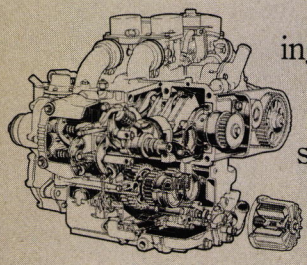

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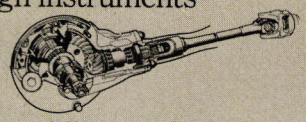

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CYCLE GUIDE'S CYCLE GUIDE

OFF-ROAD

MAKE & MODEL	ISSUE	ENGINE TYPE	WHEEL TRAVEL, IN. FRONT/REAR	WEIGHT, LBS	HORSEPOWER @ RPM*		GEARS
Can-Am 250 MX-5	Jan. '79	Two-str.	10.8/10.0	218	32.1	8500	5
Can-Am 250 Qualifier III	Feb. '80	Two-str.	9.7/9.8	230	25.2	8000	6
Cam-Am 400 MX-6	June '80	Two-str.	11.5/10.8	233	38.3	6500	5
Honda CR125R	Jan. '80	Two-str.	11.5/10.8	202	20.8	10500	6
Honda CR250R	May '80	Two-str.	11.8/11.0	222	27.5	7000	5
Honda XL185	March '79	Four-str.	7.4/6.75	239	11.2	7500	5
Honda XR185	March '79	Four-str.	8.0/7.75	221	12.8	10000	6
Honda XR500	May '79	Four-str.	8.5/8.6	273	25.8	6500	5
Husqvarna 125CR-'80	Nov. '79	Two-str.	11.8/11.8	214	18.8	11000	6
Husqvarna 250CR	Dec. '78	Two-str.	11.8/11.8	227	24.3	8500	6
Husqvarna 250WR	Aug. '79	Two-str.	9.5/9.5	238	21.9	6500	6
Husqvarna 420AXC	Oct. '80	Two-str.	11.5/11.9	239	NA	NA	4
Kawasaki KLX250	Sept. '79	Four-str.	9.8/10.5	239	15.2	8500	5
Kawasaki KX125 A5	Oct. '79	Two-str.	9.8/10.0	194	20.0	11000	6
Kawasaki KX250	Sept. '80	Two-str.	11.3/11.2	233	26.8	8000	5
Kawasaki KX420	July '80	Two-str.	11.0/11.3	250	34.0	7000	5
Maico 400 MI	April '80	Two-str.	12.3/12.0	233	35.5	7000	5
Maico 450 MI	April '80	Two-str.	12.3/12.0	236	37.0	7000	5
Montesa Cappra 414 VE	Oct. '79	Two-str.	10.9/10.7	236	28.5	6500	4
Suzuki PE175	Aug. '78	Two-str.	8.8/9.4	216	11.2	9000	6
Suzuki PE400	Nov. '80	Two-str.	11.3/11.3	250	30.9	7000	5
Suzuki RM125T	Dec. '79	Two-str.	11.2/11.7	200	19.8	10500	6
Suzuki RM250N	May '79	Two-str.	11.2/11.8	218	27.1	8000	5
Suzuki RM400N	Sept. '79	Two-str.	11.2/11.8	229	28.1	7500	5
SWM 175 ISDT	Aug. '78	Two-str.	10.0/10.0	220	17.3	9500	6
Yamaha Pro-Tec 600	Nov. '79	Four-str.	10.5/10.1	262	46.2	6500	5
Yamaha IT250G	Dec. '79	Two-str.	9.8/9.8	244	27.7	8000	6
Yamaha TT250G	Aug. '80	Four-str.	8.8/7.5	242	17.7	8000	5
Yamaha YZ250G	March '80	Two-str.	11.2/11.6	217	29.6	8000	6
Yamaha YZ465G	July '80	Two-str.	11.2/11.8	228	39.4	7000	5

*Horsepower shown is taken at the rear wheel and does not account for transmission losses between the engine and rear wheel. These results may differ from manufacturer's claims or from results obtained using a different dynamometer.

STREET

MAKE & MODEL	ISSUE	ENGINE TYPE*	QUARTER-MILE, SEC./MPH	TOP SPEED, MPH	WEIGHT, LBS	FUEL CONSUMPTION, MPG	STOPPING DISTANCE FROM 60 MPH, FT.
BMW R100T (Dressed)	Aug. '79	2C/G	13.81/92.9	119	521	38-53	142
Ducati Darmah	Sept. '78	90-deg. 2D/F	13.41/97.5	118	487	25-40	120
Dunstall-Suzuki GS1000 CS	July '79	4A/F	11.32/117.0	154	488	37-.5	124
H-D CLE Sidecar	Sept. '79	45-deg. 2D/F	17.60/69.3	91	1036	25-35	181
H-D Tour Glide	Sept. '80	45-deg. 2D/F	15.58/83.9	108	785	35-44	223
Honda CB400T Hawk	March '80	2A/F	14.37/88.6	100	391	51-65	139
Honda CX500 Custom	Aug. '79	80-deg. 2E/G	14.12/92.9	102	468	44-51	146
Honda CB650	Feb. '79	4A/F	13.29/99.9	113	447	37-51	131
Honda CB650 Custom	Dec. '79	4A/F	13.10/99.8	113	447	44-52	131
Honda CB750F	Oct. '79	4A/F	12.41/106.8	128	524	31-52	135
Honda CB750C	Nov. '80	4A/F	12.68/105.3	128	530	39-46	131
Honda CB900C	June '80	4A/G	12.44/107.9	132	588	37-44	155
Honda Interstate	March '80	4C/G	13.40/96.0	121	718	33-45	146
Honda CBX	Dec. '79	6A/F	11.86/114.5	130	555	19-36	145
Kawasaki KZ550	Sept. '80	4A/F	13.45/97.1	103	426	37-51	150
Kawasaki KZ650 Custom	May '79	4A/F	13.16/100.2	116	483	45-49	125
Kawasaki KZ750	May '80	4A/F	12.50/107.8	127	471	39-50	134
Kawasaki KZ1000	Aug. '80	4A/F	12.12/111.1	130	548	37-45	131
Kawasaki KZ1000 Shaft	Aug. '80	4A/G	12.19/112.2	132	582	32-44	129
Kawasaki Z1-R	April '80	4A/F	12.24/110.6	130	552	35-48	131
Kawasaki KZ1300A GT	Sept. '80	6A/G	12.71/107.4	135	730	31-45	146
Laverda 1200 Jota	Dec. '78	3A/F	12.54/105.0	121	518	29-37	145
R.C. Turbo CB750F	Oct. '80	4A/F	11.99/113.8	NA	523	27-39	135
Suzuki GS450 ST	May '80	2A/F	14.09/92.5	100	397	55-57	127
Suzuki GS750ET	July '80	4A/F	12.62/105.5	122	523	39-55	130
Suzuki GS850N	March '79	4A/G	12.81/104.0	116	566	35-45	153
Suzuki GS1000E	Aug. '80	4A/F	11.98/113.9	136	528	32-50	137
Suzuki GS1000G	Aug. '80	4A/G	12.34/110.8	139	564	30-51	141
Suzuki GS1100ET	April '80	4A/F	11.43/118.3	140	544	37-49	116
Triumph Bonneville Special	July '79	2A/F	13.94/96.2	110	411	45-55	175
Yamaha RD400F	June '79	Two-str. 2A/F	14.16/90.2	98	355	30-43	129
Yamaha SR500E	April '78	1B/F	14.98/84.2	92	364	49-58	132
Yamaha XJ650 Maxim I	June '80	4A/G	12.60/107.4	120	453	40-54	128
Yamaha XJ650	Nov. '80	4A/G	13.19/102.4	125	476	43-44	NA
Yamaha TZ750E	April '79	Two-str. 4A/F	11.62/125.5	180	331	NA	NA
Yamaha XS850LG	Feb. '80	3A/G	13.10/101.7	116	548	42-55	144
Yamaha XS1100SG	Jan. '80	4A/G	11.94/112.6	135	572	42-47	129

*A-Transverse Vertical, B-Vertical, (single-cylinder only), C-Horizontally Opposed, D-Tandem Vee, E-Transverse Vee, /F-Chain Final Drive, /G-Shaft Final Drive, /H-Belt Final Drive

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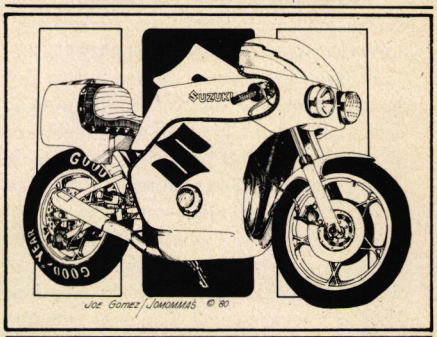

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Editorial

Taking a joyride on the NR500

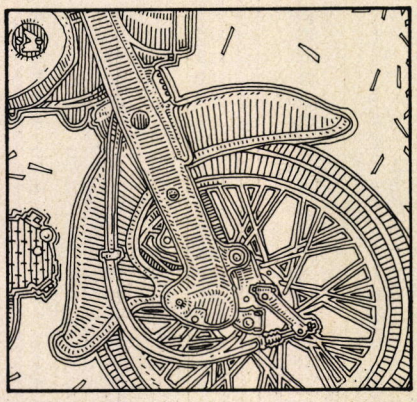
The truth about the men who make motorcycles

• Once you've seen the dimensions of Honda's Tochigi proving ground, it's easy to believe that motorcycles are produced with clinical dispassion. The far reaches of the Tochigi testing apron, the acceleration strip, the skid pad, the other-worldly scale of the 2.5-mile oval with its 42-degree banks—steeper than Daytona—the narrow concrete strip that duplicates Interstate expansion joints, all bespeak an abstract interest in transportation vehicles. It fits right in with the fleet of dynomometers and the platoon of Honda R&D employees hunched over countless uncluttered drafting tables at the Asaka R&D center.

It's these instruments of design and development that convince people that motorcycles are produced by machines rather than men. The trouble is, they never look beneath the identical white jumpsuits and green-and-white caps of Honda's engineers. If you do, you find faces fired by tremendous enthusiasm for motorcycles. You see, machines do not make motorcycles, engineers and product planners do. And you can find this tremendous enthusiasm for what motorcycles do even in the face of so rarified a personage as Syoichiro Irimajiri, the Managing Director of Honda R&D. This might be the man behind the CBX, the man who oversaw the development of the new generation of Honda motorcycles, but he looks like a kid who's been let loose in the Revell factory to make whatever kind of motorcycle model comes into his head.

This boyish enthusiasm for the making of motorcycles isn't restricted to Honda, either. Larry Works, David Dewhurst and I attended the introduction of Yamaha's 1981 models recently, and product planner Ed Burke and market analyst Dennis Stefani were both so keyed up they couldn't resist grabbing our coat sleeves and dragging us off to see what they had wrought. Competition Services' Ed Scheidler spent hours with us going over the Yamaha dirt bikes bit by bit, his commentary punctuated by remarks like, "You're going to really like this, it's *neat*." Ordinarily, a journalist must guard against an overdose of hype in situations like this, but it was clear that the enthusiasm of the Yamaha guys was generated by a need to share the experience of riding the bikes—the same impulse that urges you to ask your riding buddies to try your own bike out after you've fitted some trick part.

During a ride from the south of France to Munich that served to introduce BMW's 1981 models, Paul Dean witnessed the same



thing. BMW North America's Rolf Kettler and chief designer Richard Heydenreich relished the escape from desk-bound drudgery as much as Dean did. And after hammering a bunch of good motorcycles through the Alps, Kettler and Heydenreich couldn't wait to collar Dean at dinner and talk all night about motorcycle design and its future. These guys were in the motorcycle business simply because they really liked the machinery.

Ironically, few journalists from other magazines appreciate the fact that such enthusiasm produces an extraordinary willingness to engage in straight talk about bikes. These engineers and product planners are simply bursting with insights, but only rarely will journalists bother to talk to them. During a CG-sponsored trip to the Cologne international motorcycle show and particularly to the Metzeler and Continental tire factories, David Dewhurst noted that his contacts were hungry to talk to someone outside their immediate circle who was genuinely interested in their work. Dewhurst spent hours speaking with Metzeler designer Siegfried Hagl and Conti designer Manfred Kunz just because they were so anxious to talk in depth about their work.

Even Honda's Irimajiri is subject to the same syndrome. He wants to share the neat things he's capable of building. For example, he heads Honda's NR500 roadracing project, arguably the most exotic motorcycle in the world. This four-stroke racer is protected by hundreds of patents and is as shrouded in secrecy as any racing bike can be. At the end of the day in which Honda's 1981 models were available for riding at the Tochigi proving ground, Irimajiri presented the bike to the assembled group of journalists. It was the Harris-frame model, fresh from the German GP at the Nurburgring. The presentation seemed the right thing to do, part of a conventional public relations gambit to convince a bunch of impressionable American journalists of Honda's commitment to visionary engineering. Except Irimajiri went beyond the bounds of the usual PR stroke—he invited us to *ride* the bike for two laps around the high banks as fast as we dared. I admit I was only the second guy to grab a helmet.

Whenever opportunities like this come along, it's a great temptation to brag that you found God at 18,000 rpm. In reality, though, you don't have time to notice much. To be sure, I noted the hollow cough of the V-4 engine, almost like a two-stroke twin. Then the wide powerband, from 10,000 rpm to 18,000, felt generous. The riding position couldn't have been more perfectly fitted to my form. And then there was the tremendous heat thrown off by the engine, despite the gathering dusk and the sprinkles of an incipient rainstorm.

Yet the thing I appreciated most in my two laps aboard the bitch goddess of roadracing was Irimajiri's enthusiasm for the motorcycle. In our conversations over the past year, he has been as excited over the prospect of riding the bike as any journalist—indeed, he finally climbed aboard only the day before we did. He clearly relished talking about the bike and even more apparently appreciated the enthusiasm generated among others by the experience of riding the bike.

In the end, I think of the men who handicraft motorcycles as essentially hobbyists. They are people who amaze even themselves at the wonders they can work with their hands—whether they're controlling a computer or a lathe. And after these people have made some really wonderful two-wheel thing, they most enjoy seeing other people discover how neat it is, too.

If you really want to understand the way in which motorcycles are made—not simply produced—you should ignore the Detroit-style assembly-line stereotypes lodged in your mind. Instead, you should think of thousands of people like Syoichiro Irimajiri, people who have it in their power to make really trick motorcycles and who do so for the sake of the bikes themselves rather than the profit that can be derived from them. Sure, some people would have you believe that motorcycle manufacturing is a damned serious business. But I think engineers and product planners are in the motorcycle business just for the fun of it—just like I am. —*Michael Jordan*

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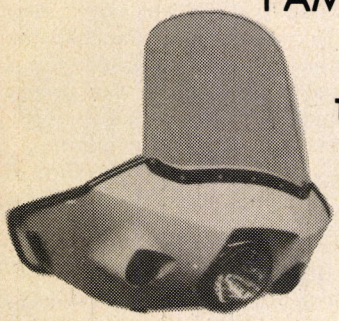

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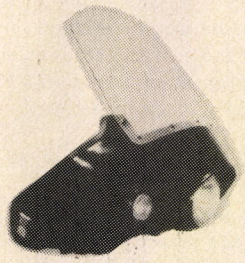

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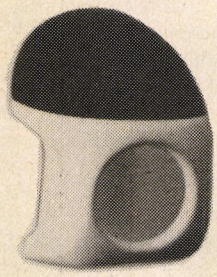
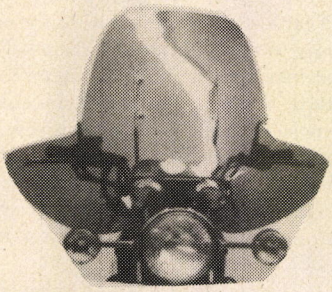


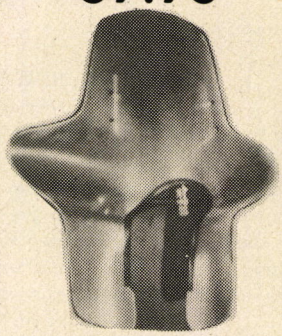
Cafe Fairing with style. Comes in white or black with smoke or clear shield. Made from ABS plastic and universal mounts to fit all popular motorcycles.

$49.95



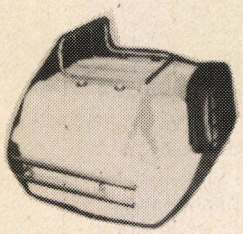
Fairing Style Windshield with universal mounts to fit most major model motorcycles. Available in clear or smoke. Provides protection from the cold winter winds.

$39.95



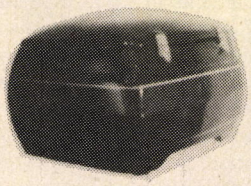
Deluxe Fairing Style Windshield with added leg protection from the wind. Universal mounts to fit most model motorcycles. Available in clear or smoke.

$69.95



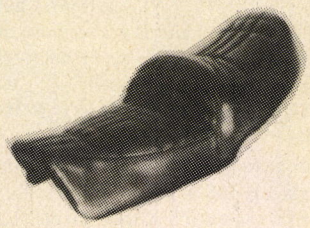
Attractively styled travel trunk in black or white. Manufactured from ABS plastic. Comes with top rack, back pad, and side rails in chrome. Trunk has hinge and locking keyed lock for protection.

$99.95



Large Capacity Travel Trunk manufactured from fiberglass and available in black or dark silver. Keyed lock closes lid. Close Out Special. Quantities limited on this special design.

$59.95



HONDA GL1000

Super Seats are an exact duplicate of the original stock base but with a bucket styling. Catch the price on this one. All stock hardware will apply easily. A Mr. Seats Naugahyde Seat.

$39.95

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Letters

P.O. Box XJ650

IT DOESN'T REALLY FIT IN A MAILBOX

November's "Untouchable" Yamaha XJ650 arrived in my mailbox early Saturday and whisked me off to better places. Perfect riding position, smooth, workable power, firm but comfortable suspension, impeccable handling and optimum cornering clearance. I was on a tireless trip for hours.

But then, after I had read the article twice more, I realized that Monday morning I'd be back at my job, working on (and riding) uncomfortable, EPA-mandated, ill-handling "USA-only" Customs. Sigh. Would someone please tell Japan that I, for one, will buy *any* bike as good as the XJ.

Joe Cline
Sharon, Pennsylvania

Someone just did—ed.

SERIOUSLY, NOW

As a salesman at a Midwestern dealership that sells the three largest brands of Japanese motorcycles, I am almost sickened every time a Special, Custom or LTD rolls out the door. Bring on the XJ650. If only the American public knew what it was missing! Enough of the Chompers, give us some serious motorcycles, Euro-style.

Kevin Moorhead
Blue Grass, Iowa

HAVE YOUR TICKET READY

The XJ650 sounds like the kind of bike I've been waiting for; how do I get one?

Barry Klein
Sylmar, California

The end of the line is somewhere around the corner of the building by now—ed.

OUR OWN LITTLE SOAPBOX OPERA

I'm sure glad to know that your staff stands up for a bike like the XJ650. I haven't seen such a nice piece of riding hardware since you did the test on the CB900F.

Everything on the XJ makes good sense to me, from the huge, eight-inch headlight, the safety of the high-beam rocker switch, the generous cornering clearance to the upswept mufflers that accentuate the XJ's GT lines. All of this goes together to make the XJ650 "The Right Motorcycle," as you said. I'd gladly buy one, if Yamaha would just sell them here.

It's fine with me if 90 percent of the people where I live want to ride up and down the street on their factory customs, but let us Euro-freaks have a little fun, too. Getting out on some backroad on a bike the caliber of the XJ would have to be one of the finer things in life.

Maybe if Yamaha got enough response from the Euro-contingent here it would send some of the grade-A stuff over. If climbing up on a soapbox with your staff will help, I'll gladly oblige.

David Arcuri
Hickory, North Carolina

I want to climb up on the soapbox with you and preach to the U.S. and Yamaha about how much we need and desire the European XJ650. Now that you have made me aware of the void that exists, I want the machine to fill it.

Dennis Plyler
Greensboro, North Carolina

SURVEY SURVEY

Thank you, oh thank you for the opportunity to speak out on the Yamaha XJ650 Eurobike. Except for the double disc on the fork, it is exactly the bike I designed for Yamaha during a marketing survey. I was really disappointed when I saw the Maxim. I now have an XS750E, but I would trade it in a minute for the XJ650, as it corrects my only objections to the 750—vibration and weight. You've got my vote.

Hank Fritze
Renton, Washington

I don't know why we can't have the goodies that Europe gets, but it would be great if there were a choice for those of us who appreciate a different style of bike and riding position. Have marketing surveys really shown that it wouldn't be profitable to have another line of bikes than those offered now? What about the seasoned riders who were brought up on European machinery and who appreciate the lines, form and function of a completed motorcycle? Even though it might be difficult to purchase and maintain a bike made in Europe, I should think that it would be more satisfying. I still thoroughly enjoy my Ducati Darmah.

I strongly feel that we should have a choice of machinery—and that includes the Euro 650. I also believe that anyone who keeps an open mind about experiencing the joy of a complete motorcycle will also be convinced.

Robert J. Conard
Tulsa, Oklahoma

In addition to the XJ650, please add the RD350 L/C, the Honda CB900F and the Honda CB1100R mentioned in the November Guide Lines.

Frankly, I don't understand the marketing strategies. If the bikes could be certified for U.S. emissions laws, why *not* sell them here? The more one has to offer, the better one's chances of success, I should think. I am sick and disgusted with chopper-type versions and continually reading about fabulous machines available only "over there."

Tom Gaylord
Houston, Texas

PIGGY BANK BIKER

About the XJ650—I want one. I want one real bad. I am one of those who ride for fun (recreational therapy), for the sheer sensual experience of traveling through space and time via two wheels.

I don't need image; if I did I'd buy $200 cowboy boots and Italian leathers. But where, oh where, can I get a reliable, performance-oriented, mid-size, beautiful piece of motorcycle like the XJ? If you can pull something off and get it marketed in the land of mass consumption, I'll start saving my change immediately! Can you hear me, oh honorable samurai of the highways?

Boyd Whitfield
Dalton, Georgia

Please help! We need the Euro XJ650 now!

Rich Richardson
Long Beach, California

Okay, add one more "yes" to the tally on the XJ650. See what you can do with Yamaha about getting the bike over here. Ask them, though, nicely if possible, to ditch those wheels. Geeze.

D. Galloway
Claremont, California

Yes, yes, yes, give us an XJ650. And an RD350 L/C. And a CB900F. Real motorcycles deserve a place in the showroom alongside the Specials and Customs. Sport riding *is* alive and well in America, but we're building the bikes instead of buying them new. Wake up, Yamaha.

Bill McLain
Albuquerque, New Mexico

I vote for a Yamaha 650 Eurobike. Choppers make me ill. But do you think they could come with a better graphic treatment and a fuller tail piece?

James E. Larsen
Hampton, Virginia

Why not, it's your dream—ed.

Continued

LAST YEAR, KAWASAKI REWROTE THE BOOK ON DIRT BIKE SUSPENSION.

THIS YEAR, W
TWO MORE

This success story began with the introduction of a radically different enduro machine. A single-shocker, but not like the other, top-heavy system. It was mounted down low where it belonged, for a low center of gravity and quick handling.

We called it Uni-Trak™—and word traveled fast. So did Jack Penton, who based his enduro team on this new bike, the KDX175. It was a winning combination that went gold the first time out.

The winning 175 is back, with some important revisions. The forks are air-adjustable; the Uni-Trak has been improved with revised rates; and the already potent engine gets a healthy 12½ percent boost in power.

The KDX250 is back, too. Named one of the Ten Best Bikes of 1980 by *Cycle World Magazine*, this winning 250 is even better for 1981, with an all-new Uni-Trak suspension.

Also getting the Uni-Trak advantage is the open-class enduro, the big-bore KDX420.

The brand-new Uni-Trak 250 and 420 are built in the US—and they're built to win.

With all-new aluminum

VE'VE ADDED CHAPTERS.

shocks—damping and preload adjustable, and gas pressure variable. With new progressive spring action. Trick new forged aluminum swingarms. Quick-release rear wheels. And for all the Uni-Trak machines, optional multi-rate springs for even finer suspension tuning.

The new Uni-Trak really puts the power to the ground. Power that's been boosted for '81. The open classer gets another 30 cc of push; The 250 gets more bottom end and midrange, with a wider top-end band. It also gets a new six-speed transmission.

Last year, we rewrote the book—and let the KDX175's performance provide the footnotes. This year, Kawasaki's dirty story gets even better, with an improved 175. And gets bigger, with the brand-new Uni-Trak 250 and 420.

Get in on this winning story before it becomes history. Because you *can* judge a bike by its side-cover—as long as it's green!

Kawasaki

Let the good times roll.

For off-road use only. Specifications subject to change without notice. Availability may be limited. Member AMA and MSF.

I must say that the Eurobike 650 is superb. I lived in Spain for four years and got the opportunity to find out what a good roadgoing motorcycle should be. The XJ seems to be a cross between the 750F, a Ducati 500 and a BMW R65. If Yamaha brings the bike here, a set of Fiamms and a Rabid Transit fairing will find their way onto mine. Tell Yamaha to get rid of those hokey stripes, though. My old GT750 still has 50,000 or so miles still left in it, but if the Eurobike comes to the U.S. I'll be putting those miles on a foreign beauty. I'll buy, I'll buy.

George M. Mirda
Satellite Beach, Florida

YOU GOT IT

You asked for it. Shove over and make room on that soapbox for one more. I've been searching through the great morass of absolutely uninspiring Japanese machinery for some time now, hoping to find a replacement for my long-loved BMWs. Since the high-octane has dried up, I've been reduced to half-throttle, wimpy passing maneuvers, trying to keep the thing from rattling to death below me. So, on to Jap iron, but please, deliver me from this constantly flowing tide of Specials. After an R100RS and S-model BMWs, they just don't cut it. Disregarding their preposterous riding positions, they look like hell to boot.

This Yamaha that you've found is clean, functional and beautifully executed. I will have to agree with Steve Thompson that the riding position goes a long way toward making the bike feel better—along with handle better. The handlebar setup looks like quite an improvement over my RS, and the slight rearsets don't hurt, either.

Please, please; if our or your collective clout and influence can be brought to bear, please do so. I would like to have one of those XJs at my disposal. Where shall I mail my deposit? My father just read the article, so now you can send two. Yamaha seems to like making money, and I'm sure that there's a definite market for this 650 here. What are we waiting for? Deliver us from mediocrity.

Doc Stickel
Millburn, New Jersey

STILL COUNTING

Count me in on the soapbox with you. The sporty XJ is just what I've been looking for to replace my aging RD350. The 750F is close, but the XJ is right in the cross-hairs. Thanks for an inspirational look at an inspiring motorcycle. I'd pay cash for one in the morning if our local shop had one.

David Clark
Midland, Texas

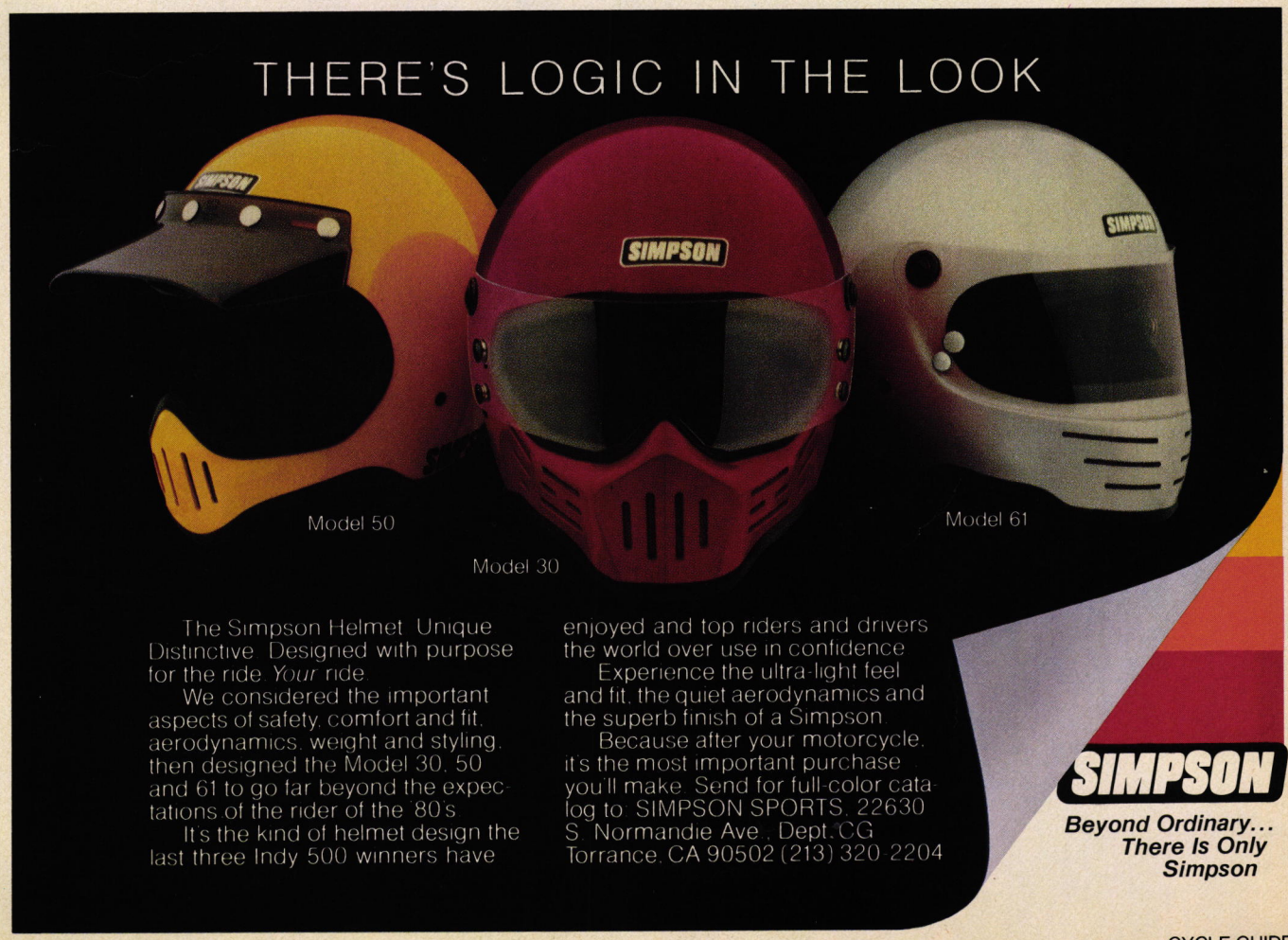
There seems to be a pattern emerging here. ed.

OR MAYBE JUST LEAVE US ALONE

You guys really blew it. Why waste my time telling me about something I can't buy? Yeah, I like the looks of the XJ650, and I'd probably like to own one. But I can't, so I'd just as soon not know about it. Don't tease me into reading your rag with something that I can't have. So what if I don't like everything that's on the American market? What good is bellyaching about something that just isn't going to happen? Try keeping your stories confined to something a little more relevant for a change.

Jack Sutton
Miami, Florida

Don't look now, but there are a lot of people on this page who have no idea what makes you tick—ed.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Letters

A thin gray haze,
Money talking,
Labeling the mixers

HELL, SOUNDS LIKE A SLOW LEAK AT THE HEAD GASKET

I picked up your September issue comparing the KZ1300 to the Tour Glide. I like the Tour Glide. I bought a KZ1300. Your test belonged in an episode of "Second City TV" because it wasn't good enough for "Saturday Night Live." A lot of ozone! Blown mind! Head trips! A high-strung motorcycle that wants to do things quickly? Magic involvement with America? Forces you to pay attention to it? How? You guys expect to fly 30 inches off the ground. You guys make a prospective buyer cringe. A touring bike is what you make it. You control it, it doesn't control you! I'll admit that there is heat coming out of the engine, but it's not that bad. You make these machines sound like rolling disasters with your picky journalism. Tour in a Cadillac. Otherwise, I like your magazine.

Mike Salerno
Novato, California

That hardly seems possible—ed.

AN ENGLISH LESSON

Techspeak is well-appreciated, and the October issue's description of a constant-velocity carburetor is no exception. I think readers might be interested to know something of its history. Looking at the latest round of Japanese multis, one might think that it was a Nippon device. Not so.

The "CV" was originally a thing made of leather, by Smiths Union, in England, more than 60 years ago. The S.U. carburetor has been refined over the years, and is currently in use on Rolls Royce, carbureted Jaguars, Rovers and several other cars. At one time it was also found on Rileys, Humbers, Aston-Martins, Morris (and the hot-rod Morris Garages—MG), Triumphs, Singers, Morgans, Bentleys, Daimlers and a legion of cars less familiar to most of us "over here."

It's a simple thing of great beauty—elegant is the word. Many Harley-Davidson owners have installed S.U.s on their bikes (or closely related Zeniths and Strombergs). The S.U., though, was always strictly dashpot-controlled, while other related versions had, sometimes, vacuum-diaphragm control (not strictly a constant-velocity carburetor). The biggest, for example, the HD-8, contained mostly machined pieces. I don't know which was most satisfying: driving a car with S.U.s or taking the S.U.s apart.

The Japanese versions are also quite elegant. But they are, at bottom, copies of a British idea.

John T. Lloyd
Colorado Springs, Colorado

Did you know that you write with an accent?—ed.

HIGH FINANCE

What kind of drugs are the finance companies into nowadays? When I was stationed in San Diego, I found that you had to have an E-5 rating or higher to get financing for a new motorcycle (I wanted a Kawasaki 750/4), but an automobile dealer practically begged me to buy a Fiat X1-9. I could have bought it, fully financed, no down payment—and driven it off the lot that same afternoon. Now that I'm stationed in Orlando I thought the situation might be better, but that was just wishful thinking. I just wish I could understand their reasoning. I have no rent, no utility bills, no grocery bills—just a growing bank account. Please excuse my handwriting, but I am *pissed.*

Craig Fulkman
Orlando, Florida

THE TRAIL CAN DO STRANGE THINGS TO A MAN

This summer a friend and I toured the Midwest, Canada and Colorado on my GS1000E and his GS850G. As we were about to leave he remarked that he hoped I wouldn't slow us down with my frequent chain adjustment/lube stops. I told him that when he bought his motorcycle he got the shaft.

Throughout the 7000-mile trip my stock O-ring chain required adjusting three times. Lubrication consisted of a thin bead of 10W30 applied immediately above the side plate on both sides of the rear sprocket. The oil (carried in an empty filter oil bottle) was applied three times and did not sling.

My friend's motorcycle weighs 40 pounds more than mine and has 150cc less engine. His motorcycle averaged 38 mpg. Mine averaged 43. We raced a Mazda RX-7 across the Independence Pass in Colorado and I came in first. He came in third. Later that evening in an Aspen bar I once again explained the principle of function preceding form to him. I'm thinking about buying a GS1100. My friend's thinking about buying my motorcycle.

David Martin
Austin, Texas

And then you continue to lord it over him, or what?—ed.

SMOKEY AND THE PUNDIT

Congratulations, with some possible turbo smoke in your eyes obscuring your vision you added $1500 worth of accessories to your Honda 750F and the results were the same or less performance than you probably would have gotten by adding an aftermarket exhaust and carburetors instead.

John O. Hornfeck
Scotia, New York

Maybe, but the smoke won't really settle on the turbo project until the right carb has been added. Watch for it—ed. •

Exclusively GL1000

For the discriminating Gold Wing owner, S&W ENGINEERED PRODUCTS presents the MARK III Air Adjustable Shock Absorber.

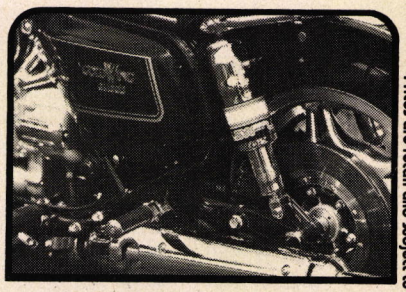
This new **MARK III** replaces the Mark II, the shock absorber that started the air suspension revolution.

The improved **MARK III** features a 1 3/16" piston for higher lift capacity at lower air pressure.

Simple to install, the **MARK III** also boasts an all new air connection fitting which guarantees against leakage.

The shorter overall length allows a lower seat height and provides a more stable ride. And, the reduced stroke design gives greater tire to fender clearance.

Available in satin black for $164.95 (42-59-046) or in bright chrome for $184.95 (49-59-046), both models come with a brilliant Scotchlight™ body decal for high visibility.



Prices are retail and subject to change without notice.

For further information check with your local dealer or S&W ENGINEERED PRODUCTS.

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Techspeak

Electronic Ignition Systems

A detailed discussion is pointless

• Electronic ignitions are simply Black Magic in a little black box. We have all come to accept their solid-state reliability, but few motorcyclists have any idea how electronic ignitions work. Just like electronic watches and calculators, we use them but never try to unravel their inner workings.

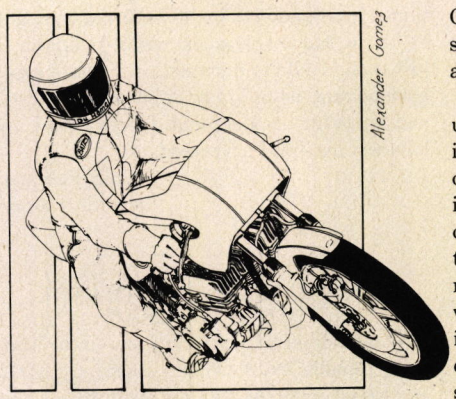
This unfamiliarity has led to a number of misleading names ending up on a wide variety of non-mechanical ignitions. By far the most common name given to electronic systems is Capacitor Discharge Ignition (CDI). And while this is the correct name for one non-mechanical system, it is only one of many different electronic ignitions.

All ignition systems, whether mechanical or electric, share the same basic job of boosting a motorcycle's 12-volt power supply to the 15,000 volts needed to jump a spark plug gap. However, the main difference with non-mechanical systems is that they perform the task using an electronic switch in place of contact breaker points and cams. Using solid-state switches in place of moving cams and points eliminates wear, which results in less maintenance. That is an advantage that any backyard mechanic can appreciate, but there are many gains that only your motor will notice. Points not only cause maintenance problems, they also severely restrict the performance of the ignition system. So one of the most common electronic ignitions uses most of the pieces from a normal inductive ignition system, but replaces mechanical points with an electronic switch.

The purpose of this switch, whether electronic or mechanical, is to provide a precisely timed break in the flow of electricity to the ignition coil. When the switch is closed, electricity flows from the battery or alternator to the primary windings of the coil. This flow of electricity through the windings generates a strong magnetic field, which also engulfs the surrounding secondary windings inside the coil.

When the coil is fully charged the points are pushed open by a cam, or an electronic switch opens to cut off electricity to the coil. This causes a sudden collapse of the magnetic field, which, following the laws of electricity, induces a strong current in the secondary windings of the coil. And it is this electricity that jumps the plug gap.

That simplified description of an inductive ignition does not really highlight the limitations imposed by mechanical points. Taken in more detail, the electronic switch assumes more significance. First, the coil



must be charged as long as possible with the points closed (dwell time). An electronic switch maximizes dwell time because it can be opened almost instantly whenever needed; but a mechanically operated switch takes a longer interval to open. The cam can only push open the points relatively slowly or they can bounce and float like overreved exhaust valves. This slow opening wastes dwell time and reduces the amount of charge in the primary windings.

If the points open too slowly, there is also the problem that electricity will arc across the slowly increasing gap. This would make the magnetic field in the coil collapse slowly, and a healthy spark would not be induced in the secondary windings. This arcing problem is also why the charging current on a points system must be restricted to around two or three amps while electronic switches can stand far more, giving the coil a healthier charge.

Electronic inductive ignition is one very efficient system, but it, too, can be broken down under various sub-headings. The difference comes in how the switching is accomplished. Martek, for instance, uses two different systems: the magnetic switch and an optical switch. The magnetic switch generates a tiny voltage as a magnet on the crankshaft moves over a fixed magnet on the stator plate. This small electrical charge is used to trigger an electrical switch that regulates flow to the coil. The optical system uses a similarly small voltage but generated by an LED eye and a photoelectrical pickup. However, this electrical switch is actuated when a disc on the spinning crank interrupts the light beam and stops the electrical current.

Whatever the exact triggering system used, these are all electronic or breakerless inductive systems, which are completely different from CDI. Like inductive systems, CDI uses no mechanical parts to produce a spark, but the way in which each type goes about the task is completely different.

As found on most modern dirt bikes, CDI uses a 300-volt AC generator. This alternating current passes through a rectifying diode as in the inductive system. However, instead of passing through a switch to the coil, the electricity charges a small capacitor, which stores the electricity inside that magic black box under the tank. Another wire feeds the box from a small exciter coil in the magneto. This coil sends a pulse of electricity every revolution to an electronic switch in the box that in turn releases the stored electricity in the capacitor. The surge of electricity rushes through the primary windings of the spark coil, inducing a massive current in the secondary windings that jumps the plug gap.

The obvious difference between CDI and an inductive system is that the spark is induced by a sudden build-up of a magnetic field rather than a sudden collapse. This means that electricity does not have to be stored in the CDI coil, which can then be made with fewer windings. It also makes the spark build up more quickly than in a regular inductive coil that has a far higher resistance. This faster spark buildup (rise time) means that plugs usually will spark even when wet with fuel. Because the spark comes in one sudden and very intense burst it cannot leak away slowly through deposits on the plug as an inductive spark can.

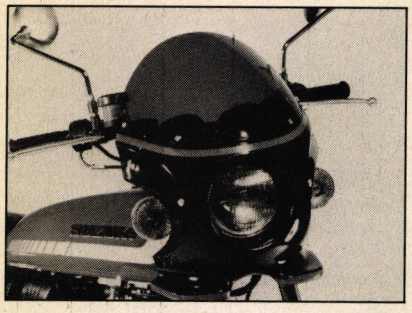
That was one of the much-advertised advantages of Kawasaki's CDI ignition on its first 500cc triples. But Kawasaki used a slightly different CDI system in which the capacitor was charged by a 12-volt battery rather than a 300-volt generator. Kawasaki's CDI called for a special oscillator to step up the voltage from 12 volts, giving the bike its familiar whistling sound. That sound can also be heard in electronic flash units, which are essentially just a CDI ignition system with a whistling oscillator boosting AA battery voltage to 300 volts.

Already you can see that there are many different types of electronic ignition broken down essentially into electronic inductive and CDI systems. And there is also a system that combines both methods to gain the advantages of CDI's better high-speed spark with the inductive system's good low-speed spark. So while electronic ignition systems may all appear to work by the same black magic, each has its own bag of tricks.

—David Dewhurst

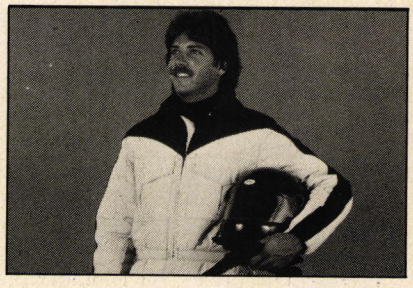
Motomart

Paging your way to pauperdom



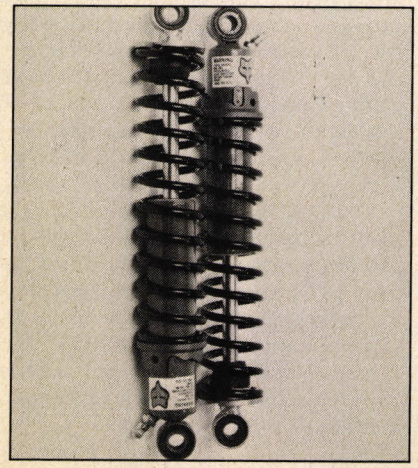
GP Fairing From Dunstall: When an ill wind blows you no good, it's time for a fairing. Owners of small-displacement motorcycles might be interested in this one from the Paul Dunstall Organisation. It's built to fit motorcycles from 50cc up to 500cc. The Dunstall GP fairing won't interfere with your turnsignals, rear-view mirrors or stock handlebars. It comes in black or silver with contrasting lining. To find out more about this fairing, contact Paul Dunstall Organisation Inc. at 27402 Camino Capistrano (Suite 104), Dept. CG, Laguna Niguel, California 92677. You can phone the company at (714) 831-0351.

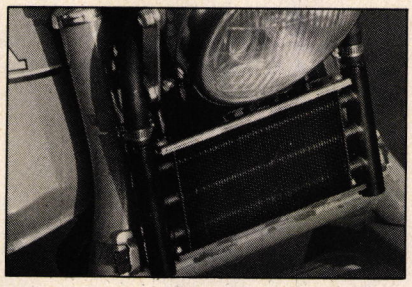
Goldfire From PJ1: Two-stroke fans will be interested in a synthetic-blend oil from PJ1 for two-stroke motorcycles. The claims are that Goldfire will preserve engine components beyond normal life expectancy, will rarely leave a carbon residue and won't produce scuffing on alloy pistons or chrome cylinder walls. PJ1 Goldfire Pre-mix is available in pint bottles and Goldrunner Injector oil comes in quart bottles; you'll find them both at dealerships everywhere.



Tour Lion Apparel: Keeping warm in December isn't easy on a motorcycle when you're creating your own wind-chill factor. But right now, Rocky Cycle dealers are selling Tour Lion gear that includes such features as a three-way turn-up collar, natural-contour sleeves and poly-slim insulation. Extra length is added to the arms and legs, and Early Warning reflective trim is added to the apparel for riding safety. Tour Lions come in a one-piece riding suit, bib trousers and several jacket styles. For more information, see any Rocky Cycle dealer or contact Tour Lion directly at P.O. Box 300, Dept. CG, Convoy, Ohio 45832. Or call (419) 749-4059.

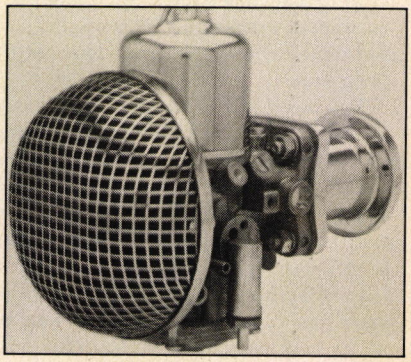
Fox Street Shocks: MXers know all about Moto-X Fox, but now the Fox is on the sly for pavement scratchers. Fox Shox are made for high-performance touring, street riding and production superbike racing. They feature internally adjustable fade-free damping, half-inch-diameter shafts and a wide selection of optional springs. And for those of you who're hard on shocks, these are rebuildable. Fox Shox assemblies are available for most street bikes; they come with red bodies and gold-anodyzed hardware. These shocks sell for $141 per pair, but that includes springs. You can see Fox Shox at any Moto-X Fox dealer.





ATC 185 Oil Cooler Kit: Off-roading when your engine is hot isn't cool. If you have a Honda ATC 185 and want to cool it down without shutting it down, consider the advantages of a Derale oil cooler kit. It features Derale's Automatic Oil Temperature Control Valve, built by Texas Instruments to Derale specs. The control valve routes engine oil through additional cooling passageways as the oil temperature rises, so the oil receives minimal cooling on start-up and maximum cooling when the engine reaches operating temperature. Derale makes this kit out of copper tubing and claims it won't cause a pressure drop; it comes with a lifetime warranty. Your $79.95 buys this kit, which includes all necessary hardware and instructions; you'll find it at most dealerships. For more information contact Derale at 138 W. Gardena Blvd., Dept. CG, Gardena, California 90248. The hot line there is (213) 532-5997.

Eliminator Turbo Carb: Turbo bike owners who think their engines need a turbo carburetor should check out Rivera Engineering's Eliminator SU turbo carb. It's a constant-velocity unit that aids quick getaways because it promises fast warm-up and easier starting when the motor is cold. Rivera also claims the Eliminator offers more performance for both standard and highly modified turbo engines and fuel economy that equals that of a stock machine. The kit comes complete with a turbo carburetor manifold, air cleaner and hardware kit that will bolt onto most popular turbo kits. For more information contact Rivera Engineering at 7928 South Greenleaf Avenue, Dept. CG, Whittier, California 90602. For faster service, call (213) 693-4273.



Thompson at Large

Welcome to Old-Bike Racing

Sign here. And then gas it.

• Forget Ronald Reagan and Jimmy Carter. What this country needs is a good old-bike racing series.

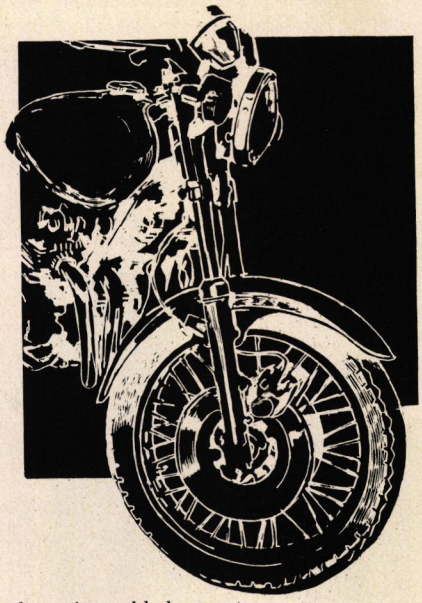
If you've ever been a racer, or if you are competing now, or if you'd even *like* to race, you know why. Cost. Plain and simple. To be competitive in the roadrace classes today requires a friendly banker and a monk's dedication. And while a lot of people can squeak by with the mortgage, the dedication part is hard to keep up; after all, how long can you sink money into that TZ750 before you have to realize that Kenny Roberts you ain't? At today's prices, probably not all that long.

Prescription: old-bike racing. Not "vintage" racing, or even "classic" racing, just old bikes. All sorts. Honda CB450s. Triumph Bonnevilles. Yamaha TD2s/TD1s, Big Bear Scramblers. Norton Commandos. BSA Rocket-3s. GP bikes, production racers, the works.

The key here, the central issue to understand even before the details, is the exclusion of the elitism that pervades so much of vintage racing. I'm not proposing yet another excuse for rich guys to unload truckloads of breathtakingly restored Velos or Indians and then sit around all day and talk about the perfectly *dreadful* state of spares preservation in Blighty. I'm talking about a *racing* series. You know: where your fiberglass isn't very pretty and your lockwiring is wiggly because you did it on the way to the racetrack in the back of the van. I'm talking about combat with older machinery, machinery no longer competitive with water-cooled, eight-cylinder $25,000 Yamahas.

You're right, of course. This crazy idea would demand an entirely new organization, because all those old bikes would have to be organized *somehow*. You couldn't just let the Bonnevilles out there with the H1Rs, or the 1955 Moto Guzzis with the Commando Production Racers. Not unless what you wanted was yet another confused, tangled jumble of old machinery circulating slowly around the track.

You'd need a vigorous sanctioning body filled with people who see old-bike racing not as a showcase for expensive toys but as a venue for frustrated racers, old, new and future. You'd need a national effort to support the whole thing, since the worst case would have local enclaves writing their own rules. An AMA-style hegemony of rules would eliminate *that* problem, anyway, no matter how many other bureaucratic bugbears it would also erect.



So you've got this organization—the American Old Bike Racing Club, say—and you've got some rules. How would it *work?*

First, you buy that '69 Commando Fastback you've been eyeing but couldn't rationalize. ("You've already *got* your Honda Gold Wing," your wife always says.) It was competitive for three years, right up to the era of the Z-1, so it's plenty fast enough to get your adrenaline going. Besides, it handles like a GP bike compared to today's hyperbikes, so every outing on it will give you grins but few scares. Then you race-prep it. Just the way your tuner would have in 1969. Except that today you don't have the worry of getting the latest, ultra-trick ohmigod tweak, because the latest tweak for a '69 Commando is five years old.

And here the special rules begin to crop up, class by class. You run that '69 Fastback in the Production Class (1965–75), and you do it on street-legal tires. No slicks. Result: a small break in the costs. Small but measurable over a season's racing.

The same ideas apply to every class, even GP, where bolting water-jackets on an air-cooled Yammie is a no-no, as is building a monoshocker out of that old TR2. While this kind of racing doesn't demand vintage-style attention to pedigrees, it does obviously require a certain amount of restraint in updating designs.

Where would the money for all this come from? Two places, mainly: membership fees, and revenue from the magazine that the AOBRC would put out weekly. That's right—revenue. From classified and paid advertising. The magazine's editorial content would report races, personalities, tips and trends in old-bike racing. It would act as the chief booster of the sport, shamelessly proselytizing the new members any way it could. Additional money could be expected to flow in, from potential sponsors. And who would those be? At first, the specialist companies—chains, tires, plugs, standard racing corporations. Later, as the boom in old bikes gathered steam (and it already has; noticed the price of that '69 Fastback shooting up lately?), you could expect advertisers/supporters/sponsors to be after the older, more affluent person who participates or spectates at old-bike events.

Actually, unlike most new series, I wouldn't expect the old-bike series to suffer from dollar shortages. The reason is simple: The trend to old bikes is already there. Not only that Fastback, but a lot of other, far less "exotic" machines are being sought out by newly interested collectors. These collectors, by and large, aren't the professional buyers who seek a high return on investment but simply guys like you and me looking for a piece of an era—theirs, their fathers' or grandfathers'. In the case of the bikes of the Sixties, which to me represent the most fertile ground for the series, there is the additional lure of simple obsolescence as opposed to quaintness; a 1969 single-carb 650 Triumph is just old, whereas a 1959 Triumph 650 is rapidly attaining the patina of a "classic," even though it hardly deserves it. So the bikes most fitted to this idea—those of the Sixties—are luckily also the cheapest, most available and easiest to prepare for racing.

There's another reason I think something like this club should be organized. Nothing, in my view, is dumber than a racing bike sitting on its stand, gathering dust. Sitting still, any motorcycle is just so much rubber and alloy and petrochemicals. In *movement* it finds proper expression, and so it shouldn't simply be stuck up on some pedestal and worshipped from afar. It should be *ridden.*

That's just my view, of course, and right now, it's the *out* view. The *in* view—in America, anyway—seems to hold that the rusty '69 Commando over there is just parts fodder for some rich guy's restoration shop. If you're a rich guy, I guess that's okay. But if you're not, and you still want to race to have fun rather than to delude yourself, well, how's the AOBRC sound?

—Steve Thompson

GUIDE LINES

Cycle Guide's Monthly Chronicle of Scoops, Tips, Rumors and Hard Facts

BY LARRY WORKS

COMING SOON

• The war is on. Following a few early-introduction skirmishes, Yamaha became the first of the Japanese manufacturers to unleash its big guns for the 1981 model conflict. And the cannon that fired first at Yamaha's Las Vegas introduction was the **XV920RH,** a 75-degree, overhead-cam inline twin. Yamaha mixed tradition with the latest state of the art in the XV, which combines its five-speed vee-twin with an externally adjustable air-spring **Monoshock,** air-spring fork, automatic cam-**chain** tensioner and an enclosed final-drive chain that runs in a grease bath. The final **drive** also provides a bit of novelty in regular maintenance—you check chain tension with a torque wrench, without ever seeing the chain.

A quick rundown on a few weights and measures offers up some reasons why Yamaha chose a vee-twin engine configuration: a dry weight of **485 pounds,** seat height that's just a hair over 30 inches and an engine that stretches the tape at 15 inches at its widest point.

• While the XV fired first, it wasn't necessarily the loudest gun at the introduction. That title probably fell to another new street bike, the **Seca 750.** To arrive at the Seca, Yamaha's high-tech flagship for the new year, the engineers at Iwata took a 748cc version of the Maxim I engine, then turned it into a 474-pound canyon-racer's delight. To satisfy even the pickiest street go-fast, **anti-dive** front suspension was added. And to fascinate the heavily addicted techno junkie, the instrument cluster from an **F-111** was grafted in place. Well, not quite, but close. A computerized monitoring system built into the instrument cluster checks seven functions of the Seca when the ignition key is turned. Any malfunction shows up on the LCD display panel. Then, as "smart" systems are wont to do, it continues to monitor itself and the seven functions while the engine is running. A fog lamp and quartz-halogen headlamp assure a clear view of the runway.

• After running through a few refurbished existing models, the next all-new Yamaha is the **Virago,** a 748cc vee-twin that shares considerable engine design with the XV. On the Virago, however, the bore has been decreased from the XV's 92mm to 83mm, and the XV's chain final drive has given way to **shaft drive.** Adjustable Monoshock rear suspension and an air-spring fork are part of the package, which relies on a single disc at the front and a drum in the rear to get slow. Even with

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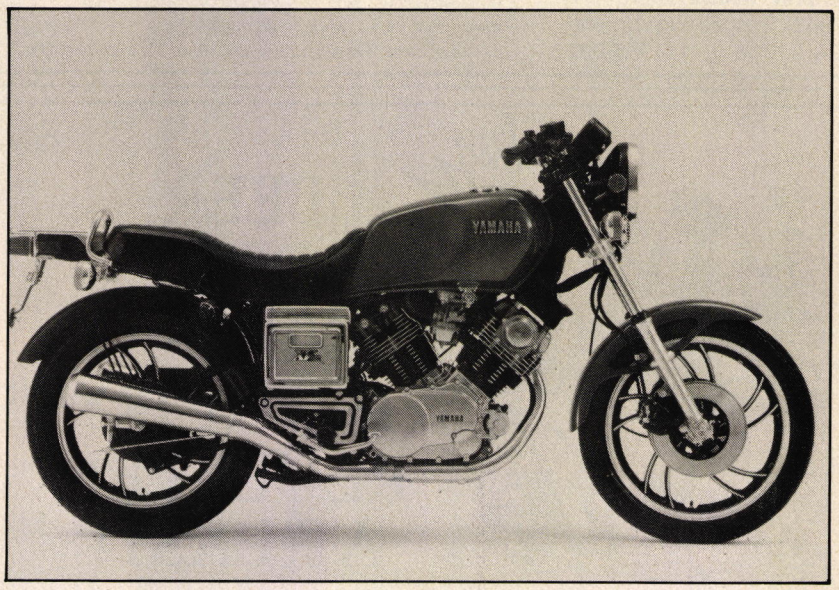
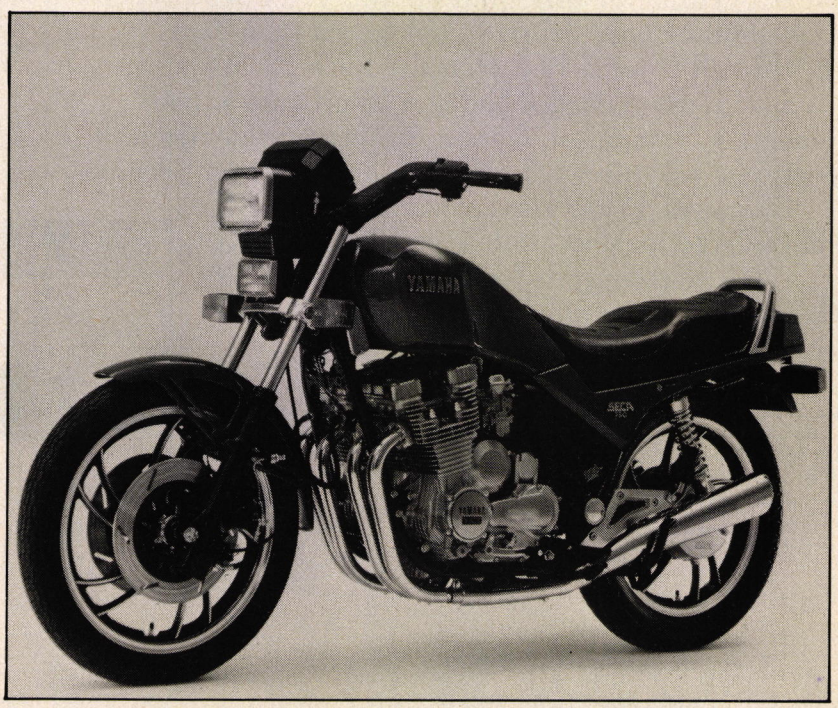


XV920RH double-barrel cannon to lead the Yamaha troops into moto-battle

Vee-twin carries a big stick and rides softly in Monoshock/air fork chassis.



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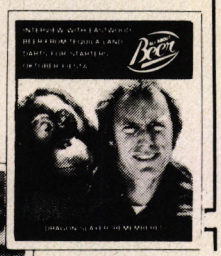

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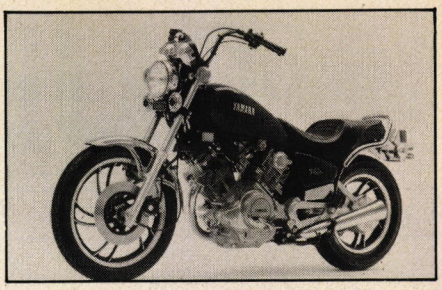
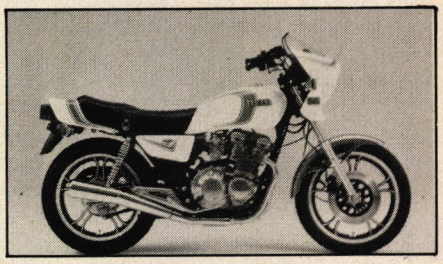


Yamaha's 750 vee-twin, the Virago

Hardtail styling, Monoshock ride.



Seca 550 to forget all about the RD400F

401 pounds and six speeds of fun.

so much in common with the XV, there's little chance that you'll confuse the Virago with its larger stablemate. The Virago is styled in late Mainstream Special, while the XV is early European Experimental.

• Jumping down a notch or two in displacement, there's also the new **Seca 550,** a high-performance mid-size street rocket that seems designed chiefly to make everyone forget the Daytona Special. No one's making specific performance claims on the 550 yet, but with six speeds and a dry weight of **401 pounds,** KZ550 owners should get a run for their money—and for their pink slips.

• The same 528cc engine also slips into Yamaha's 550 **Maxim,** which for 1981 offers fanciers of the boulevard look a steeply stepped saddle. Apparently, boulevardiers are wearing their exhaust **pipes** at a rakish **tilt** this year.

Yet another Exciter—the 185 single

Electric start and mag-style spokes.

• Yamaha clearly expects a lot of "trading up" to go on in the showrooms this year, and to give first-time buyers someplace to trade up from, a new **Exciter** has been added to complement the 250. Like the 250, the Exciter **185** will make life easier with an electric starter, engine counterbalancer and electronic ignition.

• A lot of Yamaha's attention went to the street this time around, but dirt types weren't

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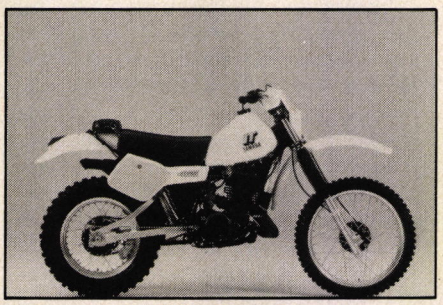
ignored. Most of the YZs, for example, got more than a few refinements. As evidence, part of the fitness program for the **YZ465** and YZ250 included more Monoshock preload settings, **43mm stanchion tubes** and redesigned brakes. It didn't stop there. A new air cleaner and exhaust pipe are also part of the '81 465, while the 250 got a longer swingarm, porting changes and a **new frame.**

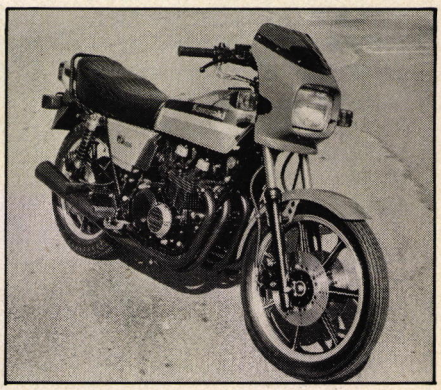
• For all the attention the 250 and 465 got at the hands of the engineers, though, it was the YZ125 that drew the crowds at the introduction. And not for the stretched swingarm or the new frame, either. The **finless** cylinder head packed in the gawkers, as did the **radiator** mounted at the YZ's triple clamp. A coolant **pump** mounted in the left crankcase cover spins at about two-thirds engine speed to force the liquid through the 125's cylinder and head. Fast lap times should result; about three seconds, as a matter of fact. That's about how long it takes the single liter of coolant to circulate through the YZ's system at **10,000 rpm.**

• As rumored in this column four months ago, an **IT465** has been added to Yamaha's latest battle plan. Like all of the 1981 ITs, the 465 arrives in white; unlike the others it runs a **17-inch** rear wheel.



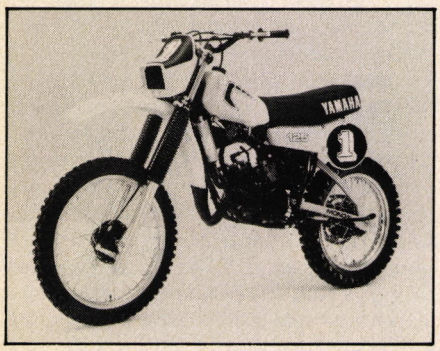
Long-awaited IT465 off-road shaker

Like having a Cadillac for the woods.



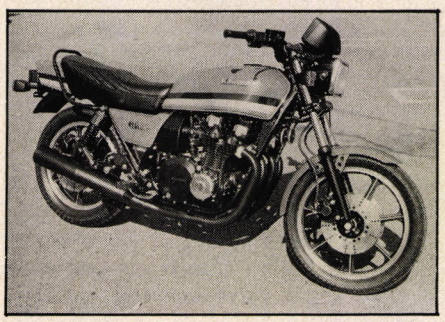
Kawasaki's pumped-up 1981 KZ550GP

More weight, more power.



Finless YZ125 has pump and radiator

Leading the horsepower to the water.



KZ1100GP temporarily at rest

Contender for the heavyweight crown.

• At this point it would be pretty easy to conclude that the only action was at Yamaha this month. This should make it a little harder. **Kawasaki's** two new **GPs**—a pumped-up 550 and an all-new 1100—should steal a little thunder from both Yamaha and Suzuki. Read more about them next month. Here, of course.

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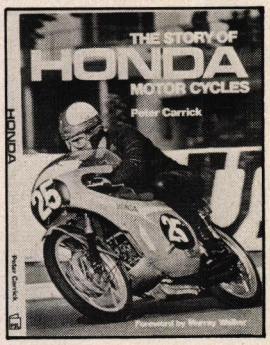
Book Review



The Story of Honda Motor Cycles
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• In sum, this volume could well be the most comprehensive and authoritative work ever published on Honda—both the man and the machine. With an introduction like that, this could also prove to be an insomniac's salvation. But it's not. The background of the world's most popular motorcycles and the efforts of the men behind the dream prove to be intriguing reading.

At times you find yourself wholly caught up in the drama and enthusiasm surrounding Honda's Grand Prix victories. But rather than just serve up a dry menu of GP wins, Carrick also provides some telling glimpses into the lives of the riders whose talents brought Honda to the forefront.

This depth of involvement by the author results in a wealth of unexpected information, both about racing and the development of the modern motorcycle. In an orderly fashion Carrick leads the reader from Honda's first engine-powered bicycles through an unsurpassed GP record (16 world championships and 137 Grand Prix victories in seven years) and into an account of Honda's current manufacturing success. The end of that path is a clearer picture of the recent evolution of motorcycling.

Carrick writes with both insight and understanding of the unique role that the Honda marque has played in the history of motorcycles. His work also contains more than 90 photographs and illustrations that relate a history of one of the most astonishing business success stories in the post-WWII period.

His work is a thoroughly informative and entertaining story that could fit into any enthusiast's library. It's a careful tale of remarkable men, history-making machines and a name that became synonymous with motorcycling in the sixties.

—George Wegner

FEDERAL CASES

• You're guaranteed to see **ERA** bulletins for some time to come, but if you ride in Wisconsin you might start seeing them in some unusual places. The Wisconsin **DOT** has latched onto the ERA theme to promote the rights of motorcyclists there. Posters, television public service announcements, state signs and reminders included with license renewals will caution motorists that motorcyclists have equal rights to public roads.

• All the attention some other states are paying to rider education and driver awareness programs might make California look a little out of place in light of Jerry Brown's recent **veto** of **SB468,** the rider education bill. According to insiders, though, the veto was not such a bad deal. First, it doesn't leave California without rider education, since there is an active government seed-money program to help start private, self-supporting MSF programs. Second, any programs instituted as a result of SB468 would have been given to that state's Department of Education, possibly resulting in a loss of insurance breaks that graduates of MSF programs enjoy.

• Another current hot topic concerns radar detectors—in Florida for instance, a minor tropical storm is raging over whether or not private citizens should go **microwave** prospecting. Not so in **Great Britain,** though, where a 1949 law reportedly outlawed their use without a special license.

• With all the **regulations** popping up these days, it's fairly easy to assume that you've got it bad. Well, at least you've got tinted visors, which is more than you'll be able to say for British motorcyclists in a few years. British regulations will eventually render the tinted visor and goggles **illegal.**

HARD CASH

• Wait, isn't that the scent of a resurrection in the wind? Following weeks of negotiation, the largest stumbling block to **Meriden** Triumph's continued production has been removed. Reports from overseas indicate that if Triumph USA can sell $4.4 million in warehoused Triumphs in this country, a government loan of 8.4 million pounds will be wiped from Meriden's slate. That still won't leave the slate completely clean since it doesn't take into account private investors, but it should clear the decks for **new production**—possibly for production of the reported eight-valve, counterbalanced Bonneville.

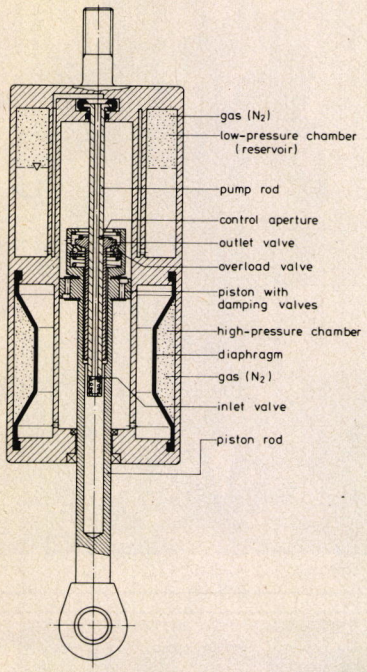
• With all the foofaraw about new bikes, especially at this time of the year, it's easy to count the **aftermarket** as just the silent partner to new bike sales. Don't. According to a recent Frost & Sullivan market survey, aftermarket dollar **revenues** for 1979 equalled 86 percent of the revenue from new motorcycle sales in that period. If you include used bike sales as a slice of the aftermarket, the total is 10 percent larger than for all new model sales.

• Prosperity also seems to be the order of the day. The same survey projects that **sales** for motorcycle-related retailers will **increase** at

Continued

HI TECH: Self-Leveling Shocks

Automatic Hydropneumatics.



• Self-leveling shocks have finally come to motorcycling. For 1981, BMW will be the first motorcycle manufacturer to offer shocks that compensate for variations in load by hydropneumatically increasing the rear spring rate.

This type of system has been available on cars for years, but bulky hydraulic pumps and sensors the system required have prevented their adaptation to motorcycles. Now, however, Boge has designed and built a self-contained self-leveling shock that is no bigger than a regular unit and that requires no external pumps or sensors. Boge's pump is actually housed inside the piston and damper rod of a triple-chamber shock. The piston and damper rod move up and down inside the inner chamber, which is surrounded by two nitrogen-pressurized outer chambers.

The upper part of the outer chamber has low-pressure nitrogen emulsified with the damping oil, while the lower chamber has high-pressure nitrogen separated from the oil by a rubber diaphragm.

The only connection between the two outer chambers is through a pump rod and the inner chamber. As the shock extends, oil is drawn from the low-pressure chamber through the pump rod and through a one-way valve. It then passes through the piston and into the inner chamber. From there it enters the outer chamber and compresses the high-pressure nitrogen.

Oil continues to pump into the lower chamber until the nitrogen pressure and oil support the piston and the weight of the motorcycle at a certain level. At that point, a vent hole in the pump rod short-circuits oil straight back into the low-pressure area.

As extra weight is added and the shock moves, the piston covers the vent hole in the pump rod and oil again pumps into the high-pressure chamber until the piston once more uncovers the vent hole.

A short spring assists the high gas pressure behind the diaphragm in supporting the motorcycle's weight. As the piston moves up and down it moves the oil, which in turn compresses the nitrogen much like a regular air shock.

Damping is handled by conventional pop-off valves in the piston; and in most ways the Boge shock looks and performs much like a regular air shock. But thanks to its internal pump, it compensates for the weight of luggage or passengers.

—David Dewhurst

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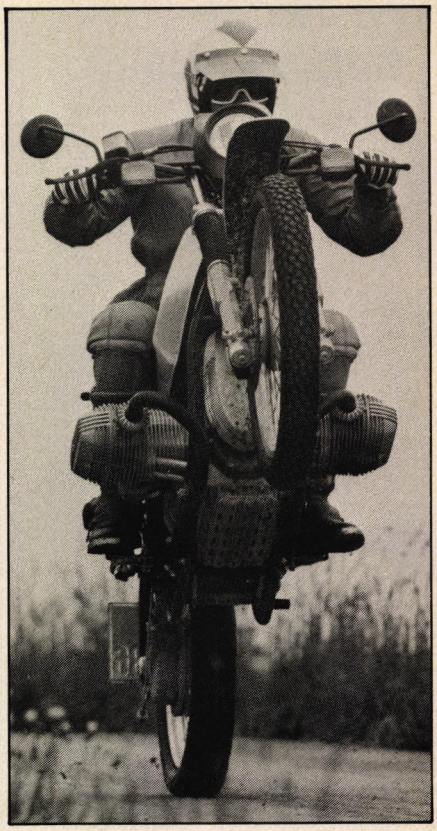
RIDE/REPORT:

BMW R80 G/S

Seeking dual-purpose status.



• The mere *thought* of riding a big BMW in the dirt is too ghastly for most people. Better to do something less masochistic, like jam burning matches under your fingernails.

BMW's designers, though, are convinced that given the right sort of BMW and a parcel of not-too-demanding dirt, riding a four-stroke flat twin off-road need not be on your list of Things To Dread. On the contrary, they believe it can be a downright pleasant experience, and so have designed "the right sort" of BMW for the job—the R80 G/S dual-purpose model. After more than 100 miles of both on- and off-road riding aboard an R80 during BMW's introduction of the bike in Southern France, I have to agree: BMWs and dirt *can* be compatible.

You must understand, though, that BMW's objective with the R80 is not to sell ISDT-winning enduro bikes or escalate the traditional dual-purpose concept into the over-750 class. So never mind the fact that special hand-built BMWs have enjoyed success in the ISDT and in cross-country competition throughout Europe in recent years. Instead, the R80 is supposed to be a touring-class, two-up motorcycle that *can* be comfortably toured in the dirt. So while dual-purpose machines almost always are dirt bikes made street-legal, the R80 is basically a street bike made dirt-logical.

The G/S instantly signals its off-road intent with a high-mounted plastic front fender and a black-painted 2-into-1 exhaust system that tucks closely beneath the cylinders before sweeping up along the left side to exit at taillight-level. A closer look will show a 21-inch front wheel, cleated folding footpegs, a bash plate on the engine's oil sump and all-new Metzeler dual-purpose tires that are speed-rated up to 105 mph—20 mph higher than any other dual-purpose trials-universal tires. But the real grabber is the unusual rear suspension. From the right side, the shaft-drive R80 G/S seems to have a fairly conventional laid-down twin-shock suspension; but a walk around to the other

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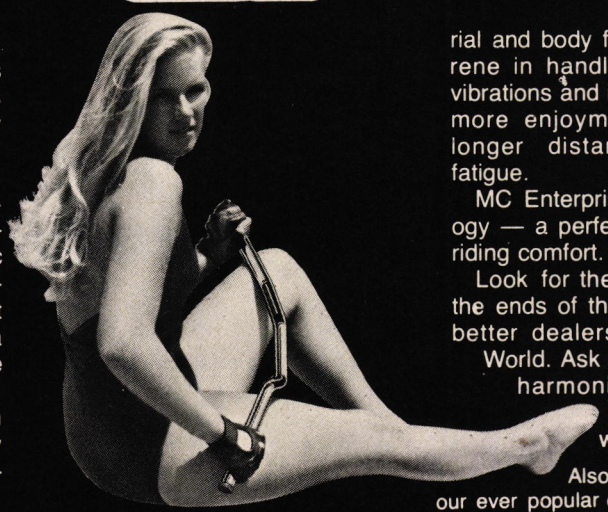

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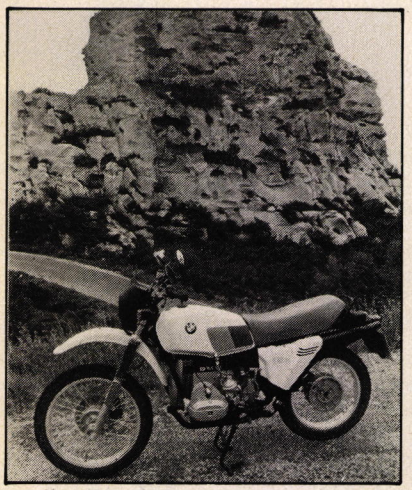
side shows that the left-hand shock and swingarm leg are, well, *missing*. There's nothing over there except for the 18-inch spoked wheel that can be removed simply by unscrewing three large hex bolts in the middle of the rear hub.

When questioned about this unusual design, BMW's engineers explained that this "Monolever" single-shock system was just one of the ways in which they pared the G/S' dry weight down to a claimed 368 pounds, about 75 pounds less than a street-going 800cc BMW. They explained that the swingarm alone is 2 kilograms (4.4 pounds) lighter than the conventional arm, yet its design offers up to 30 percent more torsional rigidity—not to mention 6.7 inches of rear-wheel travel to go along with the non-air-assisted front fork's 7.9 inches.

What emerges from this bold thinking is an incredibly light, nimble 800cc street bike that chews up rough and twisty secondary paved roads with the same finesse that an R80/7 tourer might exhibit on the Superslab. Yet it's comfortable and stable at high speeds and on smooth roads. And in the dirt? Well, it's no enduro wizard, but when ridden at less than a Gold Medal-winning pace on fireroads, Jeep trails and country roads, the R80 is more satisfying to ride than you might think possible.

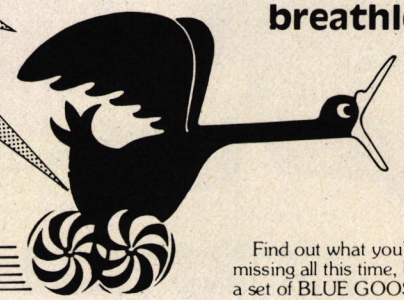


The *real* question, of course, is whether there is a market in this country for a 368-pound, $4800-dollar dual-purpose bike. The G/S would seem to open up new out-of-the-ordinary touring destinations, but there just aren't many of those left that can't be reached on a street-only bike. And riders who regularly travel the dirt roads of Rural America will undoubtedly opt for a cheaper, smaller mode of two-wheel travel. That's why with only 5000 units to sell worldwide in 1981, BMW apparently intends to test those waters with trepidation. But don't be surprised if the new campground status symbol for the coming year turns out to be an R80 G/S strapped to the back of a Winnebago. —*Paul Dean*

Continued

The goose is loose

and its leaving riders breathless!



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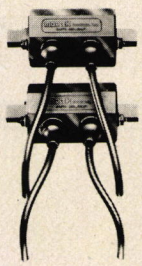

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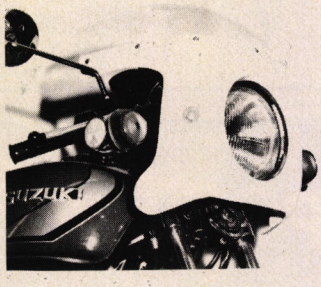

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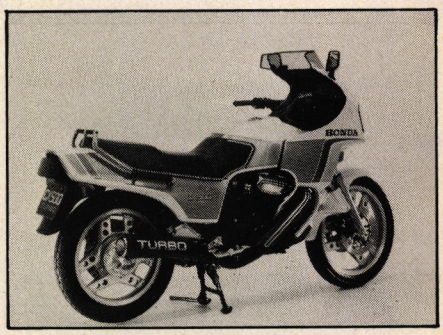
AFTER THE FACT

• You might have thought that the $3000 price tag on the Cagiva WMX125 water-pumper in last month's issue was a bit steep. So did Slater Bros., the American importer. To stimulate buyer interest in one of the first available production water-cooled motocrossers, the price has been cut by a neat $700.

RUMORS

• Motorcycling is not the way you remember it. Sometime in the last month everything changed. The reason for that change has to do with the lead rumorbike this month, the **CX500 Turbo.** Honda's Turbo was the center of attraction at the recent Cologne Show, and since its debut the rumors have been flying lighter and faster than usual. Of course, what's being debated is whether or not Honda will market the **experimental** turbobike. Wishful thinkers in the crowd say yes, within the next three or four years. The plain-variety thinkers suggest something else. They think the bike was shown merely to test the water, to break the conceptual ice for a plain-Jane version that will follow soon. Very soon.



Turbo CX500 explores the future

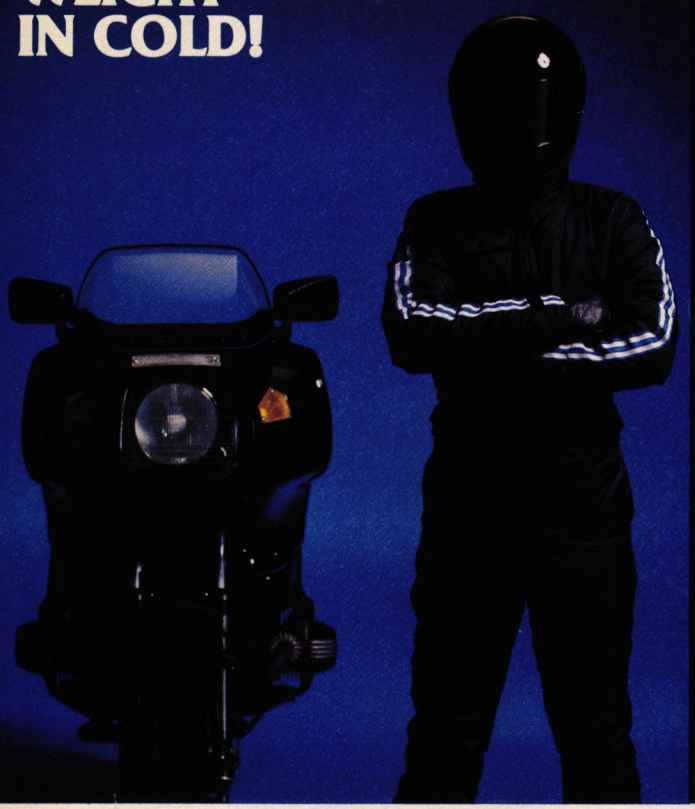
Blowing more than just hot air.

If there is a follow-up CX with anything in common with the Cologne bike, though, one thing is certain: it will shake things up a bit. Reportedly, the showbike produces in excess of 76 horsepower, enough to propel the 485-pound heavy breather to **125 mph.** But the talk isn't all geared toward top speed. Honda's turbo is also coupled with electronic fuel injection, and comes **on the boost** at a real-world-useful 2500 rpm.

• Even with the rolling reality of the CX Turbo to gawk at, some of the gossips just aren't satisfied. They keep mentioning **another vee** that Honda still has under wraps—something with more than four cylinders in an **"unusual configuration."**

• But it's just hard to tell these days. If you go for the talk of a vee-something, you also have to listen to the rest of the story. It's only polite. And the tail end of this particular piece of floatsam has something to do with **superchargers** and **leading-link** forks. If you manage to choke all of that down, you still have to deal with the whispered conversations

WORTH ITS WEIGHT IN COLD!



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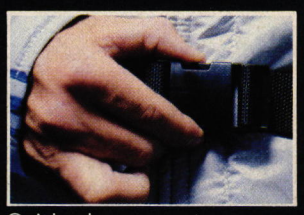

Quick release, cam type buckle is easy to open, even with one hand.

of a CX-based four that's ready for introduction at any moment.

• That's all pretty heady free association. And it's just that sort of loose talk that got the **Volkswagen** rumor started. It was all tied up with Volkswagen's acquisition of NSU awhile back, so the story goes. There was an empty NSU factory that was supposed to be reactivated to produce a flat-four Volksbike. Well, eventually nothing ever happened. The factory was pressed into service producing car parts, and any inclination that Volkswagen might have had about getting into the motorcycle business apparently stalled by the wayside.

• But even nailing the lid on a pernicious story like that doesn't stop the gossips. Doesn't even faze them. They're convinced, for example, that **Suzuki** is not telling all. And since Suzuki won't release its full **1981** model information until later in the year, they're probably right. What's supposed to happen, they say, is something that you read about in this column seven months ago: Suzuki will introduce a **650** to round out its street displacement categories. That's not just a single 650, either, but three—E-, G- and L-type. It all fits in nicely until the end—the part where the rumormongers say that the new bikes will not run TSCC induction.

• Maybe. But there is a new TSCC bike that's reportedly in the cards for 1981. It's a "very-limited-production" **S-type GS1100** that insiders say has promise. The word is that this S is the lever Suzuki will use to pry loose the quarter-mile crown from Kawasaki's new 1100GP.

• There's also talk that Suzuki's dirt plans for 1981 include unleashing a pair of **single-shock RMs**—250 and 470—while retaining twin-shock rear suspension for the RM125.

• That talk of single shocks for dirt bikes is contagious. And, according to the latest word, that **contagion** has spread to **Husky** and **Maico**, both of which are reportedly hard at work developing one-shockers right now.

• If you can catch the whispers about **BMW** these days, it looks as if there's plenty of experimentation going on in Berlin as well. The popular tale on BMW right now concerns experimentation with **16-inch** wheels. Interesting, especially when the rest of the message is that those wheels slip onto an inline shaft-drive **triple.**

• Even if you're inclined to doubt all the triple talk about BMW, it looks as if there is some refining going on. But it seems far more likely that the flat-twin will be around awhile longer. And that does nothing but support the talk that BMW is working on **four-valve** heads to bolster the performance of its current line of twins.

• As long as you're in the mood for some four-valve talk, you should know what the wags are saying about **Ducati.** Lately, a lot of different sources have dropped the hint that there's a 16-valve, watercooled **V-4** waiting to replace the existing Ducati twins.

• Seems like vees and stories of vees are everywhere these days. Yamaha's new XV920 and Virago stimulated considerable talk that the **flattrack** world might have to contend with **Yamaha** in the near future. But can there be any truth at all to the stories circulating about Yamaha's supposed interest in putting together a new engine/frame combination to do battle in the **speedway** wars?

APART FROM THE CROWD

• By now you probably think you've seen a lifetime worth of pointless, gratuitous pseudo moto-movies. Not quite. Perhaps the most inane is set for release in April. According to a press release for **"Knightriders,"** you have

"Knightriders"—joust a pointless movie

"Say goodknight, Dick.".

Continued

TRAINING WHEELS.

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But beyond that, it may be the most innovative mini ever made.

For example, how many motorcycles—let alone mini dirt bikes—offer shaft drive? Smooth, clean and virtually maintenance-free.

For kids just starting out, there's a removable restrictor plate that cuts back on horsepower until your youngster is ready

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As far as toughness and durability are concerned, don't be. The YZinger is the toughest kid on the block. With a rigid tubular frame; solid, low-upkeep pressed steel wheels; tucked-in-the-frame exhaust; telescopic front forks and twin oil-dampened rear shocks.

And because it's a Yamaha, we didn't stop there. We added still more features that make this a maxi mini. Hand-operated front and rear brakes. A convenient centerstand. Folding rubber-covered footpegs. Even padded handle bars and additional seat padding on the fuel tank.

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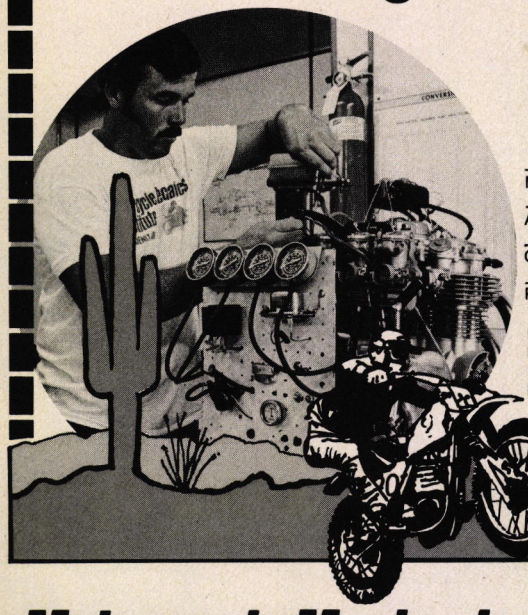

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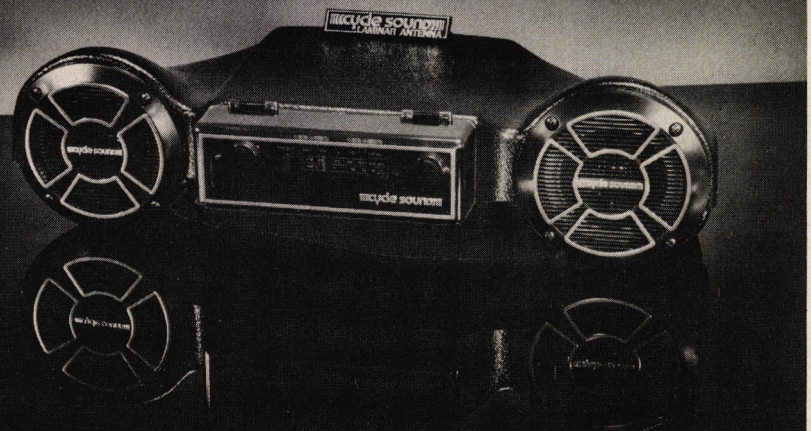

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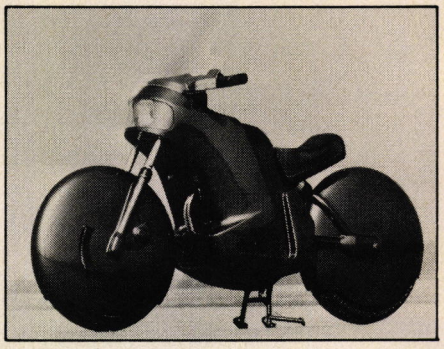
yet to live down a feature film about "contemporary knights who joust in full medieval armor."



Porsche-designed SR500 shell

Carob coating around Yamaha goodness.

• All right, that's enough snickering. This is serious. This is tomorrow. This is the motorcycle of 1990. Sure, it looks like several gallons of Hershey's finest went into covering some hapless motorcycle, but what's inside is not ice milk; it's an **SR500.** At least that's what it was before **Porsche** Design whipped it up a bit. The recipe is simple: Start with a thumper center that's been prepared with an automatic transmission and shaft drive. Then sprinkle on monoshock and add an integral braking system to taste. Finally, ladle on a thick, rich coating of Lexan and fiberglass until smooth. The recipe is for a high-mileage, simple motorcycle, and the single seat shows that it serves one. What you can't see, though, is an interesting comfort lick. Engine heat is ducted up through the fairing to exit at the enclosed handgrips—no doubt to insure that cold weather melts at your hands and not somewhere else.

93-mpg Vetter/H-D fuel-mileage champ

Gas-stingier than an OPEC oil embargo.

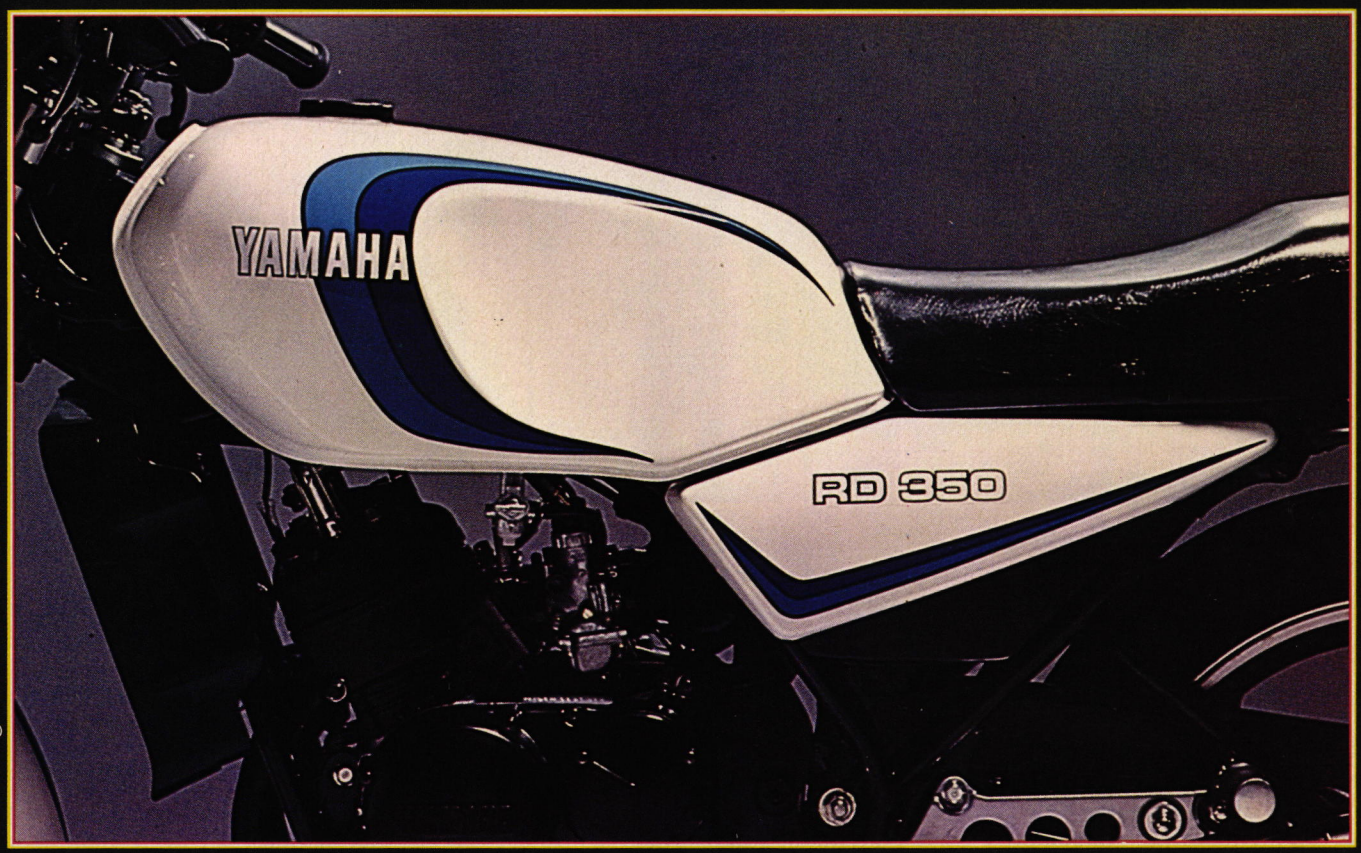
• Much of the distinctive styling on the SR500 futurebike is designed to improve gas mileage, and rightfully so. But it would have to go a long way—on precious little fuel—to top a fuel consumption figure that was set at the recent **Vetter** rally. One Lammy Johnstone set what must be a record for modern production bikes with an admirable **93-plus mpg** on a measured course. And there wasn't much in the way of super-secret technology about the machine, either—just a Harley Sportster with a Vetter Quicksilver fairing. •

ROAD TEST:

Yamaha RD350LC

Portrait of a racer-replica—a water-cooled two-stroke engine and Monoshock rear suspension in the RD that dreams are made of.

BY MICHAEL JORDAN



PHOTOGRAPHY © 1980 DAVID CLARK & DAVID DEWHURST

For as long as Yamaha has built roadracing motorcycles, street riders have wanted a piece of the action. All they asked for was a street-legal motorcycle capable of reproducing the sensations of a Grand Prix racer with a single whack of the throttle.

At first, speed-struck hotheads had to settle for 250cc TD1 roadracing pistons and barrels bolted to their lumbering YDS3s. Then the R5 arrived in 1970 to quench their passion for faster machinery. It was patterned after the Yamaha 350cc two-strokes that had begun to humiliate four-stroke bikes on roadracing circuits around the world, and for a while it and its RD350/RD400 descendants satisfied hard-core Yamaha speed freaks. But ever since the water-cooled TZ250 hit the track in 1974 followed by the Monoshock TZ of 1976, Yamaha RD riders have fretted over the growing credibility gap between the RD and their roadracing fantasies.

But now at last it's possible once again to buy a piece of Yamaha's roadracing action—the RD350LC, a Monoshock, liquid-cooled (LC) example of race-wise technological trickledown. It has become one of the most lusted-after motorcycles of 1980, the ideal street-racer for legions of RD disciples, a TZ with lights. Even though nearly nine months elapsed between the bike's introduction and the arrival of the first production units, 10,000 examples already have been sold in Europe alone.

You can't buy the RD350LC or its little brother, the RD250LC, from your local Ya-

Continued

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maha dealer, though. The explanation can be found in EPA air-emissions regulations and Yamaha's market-think for the Eighties. But even so, private individuals have begun importing RD350LCs. And indeed, CYCLE GUIDE went to the same trouble (see page 40). Even if the LC was to be limited to a very exclusive audience in the U.S., we figured the ultimate two-stroke street bike represented an experience that deserved exposure. Frankly, the temptation of getting our hands on a piece of Yamaha's action proved too much. That's how each of us came to find himself peeling off into Willow Springs Raceway's notorious Turn Eight, a long, bumpy, right-hand sweeper, while tapped out in sixth gear on this Monoshocked RD.

And in that instant, we understood why the hassles of importing the LC had been justified. The repli-TZ made the transition into Turn Eight in a single, fluid movement that only a pure-bred high-performance bike could hope to produce. Where the RD400F would have been shaking like a cowardly mongrel at 99 mph, its engine surging and bucking at 7300 rpm, the RD350LC ran straight and true at 110 mph with its belly to the ground like a race bike, its engine begging to be permitted beyond the 9500-rpm redline.

You would expect race-bike finickiness from such a motor, and that's just what you get. Below 6000 rpm, the engine isn't strong enough to pull the wings off of a fruit fly. It tells you of its unhappiness by shaking fitfully in its rubber mounts. A flaw in part-throttle carburetion (it is too rich according to factory spokesmen) makes it all but impossible to accelerate in sixth gear at less than 6000 rpm. It even takes a good deal of delicacy with the clutch just to get the light-flywheel engine away from a dead stop, as a comparison between the LC's dyno curve and that of the RD400F reveals.

You're paid back for this discomfort, though, once the tach needle crosses the 6000-rpm border and the motor begins to accelerate. It finally uncorks at 7500 rpm as port timing, exhaust tuning and carburetion suddenly come together, and the bike leaps forward with a terrific rush. In the past, two-stroke street bikes were calibrated so that port timing, exhaust tuning and carburetion affected different areas of the powerband, providing a broad spread of less-than-optimum power. The LC, on the other hand, has been tuned to provide its power all at once, like a race bike.

Power like this might lead you to expect a watered-down TZ race engine in workaday harness. But what you get is something of a water-cooled RD350 street engine. It shares the same familial resemblance to racing engines that all RD engines have, but it is not a TZ replica.

The LC's bore and stroke reproduce the old RD350's dimensions, while the separate cylinder barrels and one-piece cylinder head incorporate lessons learned with the RD400. Yet the LC's two-ring pistons and built-up roller-bearing crankshaft do not mean the LC's engine is interchangeable with previous RD's. The motor uses technology gleaned from the TZ in its bottom end. To begin with, the crankpins are integral with the outer flywheels. The inner flywheels are pressed over them, lending the lightweight crank more rigidity. Also, the cases use locating pins to keep the main bearings from spinning. Both of these features prolong crankshaft life in a high-output two-stroke engine. A close-ratio transmission, designed to cope with a narrow, muscle-bound powerband, does the job of transmitting the horsepower.

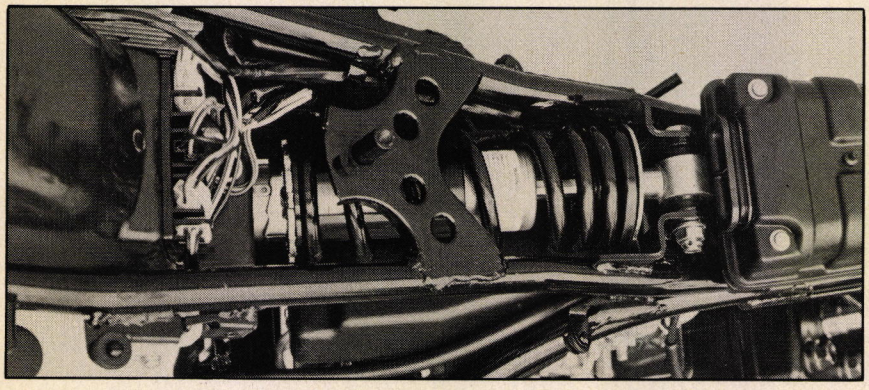
Though the LC engine isn't exactly a clone of a TZ powerplant, its radiator is more than window-dressing. When you consider that 80 percent of the heat produced by a two-stroke engine is dissipated through the cylinder head and most of the

The Shocking Question

• Why bother with a Monoshock on a street bike? Well perhaps you should ask why we ever bothered with *twin*-shock systems. You see Monoshock, or more precisely monospring, was the basis for some of the earliest motorcycle rear suspensions. In 1919 the Beardmore Precision was lifted above the rigid-frame crowd by a triangulated rear end and a single leaf spring. HRD Vincents were similarly blessed in the late Twenties.

So why did we bother with twin shocks? An answer is difficult to justify because a Monoshock rear suspension really does have many advantages. Not least of which is the increased rigidity of the swingarm. The tube layout designed to support the lower shock mount also triangulates the swingarm in two planes, which helps keep the axle and chassis running in the same direction.

A similar advantage also comes from using just one shock. If it should fade, both sides of the swingarm are affected equally. That is not always the case with slightly mismatched twin shocks that can allow both sides of the swingarm to react at different speeds, causing flex. One disadvantage can be the slightly heavier weight of a single shock system. But while high unsprung weight is a definite disadvantage, a slightly high center of gravity can also be beneficial. It helps straight-line stability while trading just a little cornering agility.



There are major difficulties with Monoshock, but they mainly concern the designer. He has to find locations for the many parts displaced by the shock. On the Yamaha, the shock passes right through the airbox space under the seat. That is why the RD350 has a pancake filter far under the tank and a complicated connection with the carb bellmouths. The airfilter in turn takes up valuable gas tank space, which might account for the rather bulbous outer dimensions of the tank.

Adjustments to the shock are also difficult to make on the RD350, requiring removal of the seat for spring preload changes. But as Yamaha has shown with its dirt bikes and even the latest vee-twins, Monoshocks can be made simple to adjust.

When adjustable with a single flick of a gloved wrist, Monoshocks really do have few things going against them. The deciding factor is the ability of the designer to integrate the concept into his motorcycle. As the RD350LC shows, the benefits are many, but so are the problems.

—David Dewhurst

rest through the area around the exhaust port, you begin to understand how liquid cooling can reduce metal distortion and so permit high specific output without risking piston seizure. The LC employs an impeller pump to draw coolant down from the frame-tube-mounted radiator and then pump it through the barrels, into the cylinder head and finally back into the radiator. A plastic helical gear located just above the oil injection pump and driven by the primary gear powers the impeller. The cooling system holds 1800cc of coolant and its overflow tank is mounted aft of the injector oil reservoir beneath the right sidecover. Since there's no thermostat in the LC's watercooling system, there's no telling what the bike might be like while trapped in a mid-summer traffic jam, but it did the job on the racetrack.

Just as the engine reveals lessons learned from the TZ hardware, so too the chassis employs TZ-think if not actual TZ pieces. In broad outline, the LC frame and early Monoshock TZ frames look the same in terms of layout. Unlike the race bike though, the RD's nitrogen-charged Monoshock is foreshortened like that of a TT250, and only its spring preload is adjustable.

Compared to previous RD frames, the LC's chassis is just an inch longer and uses

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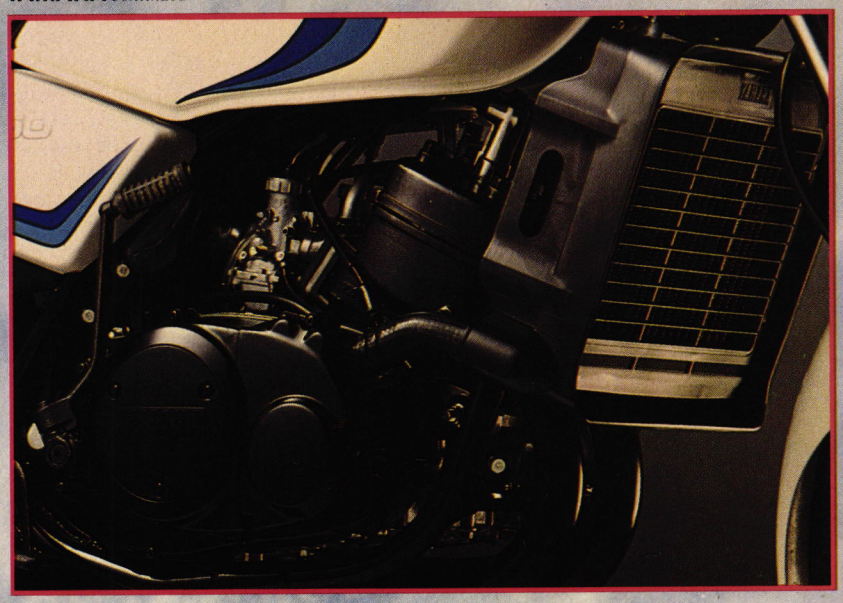
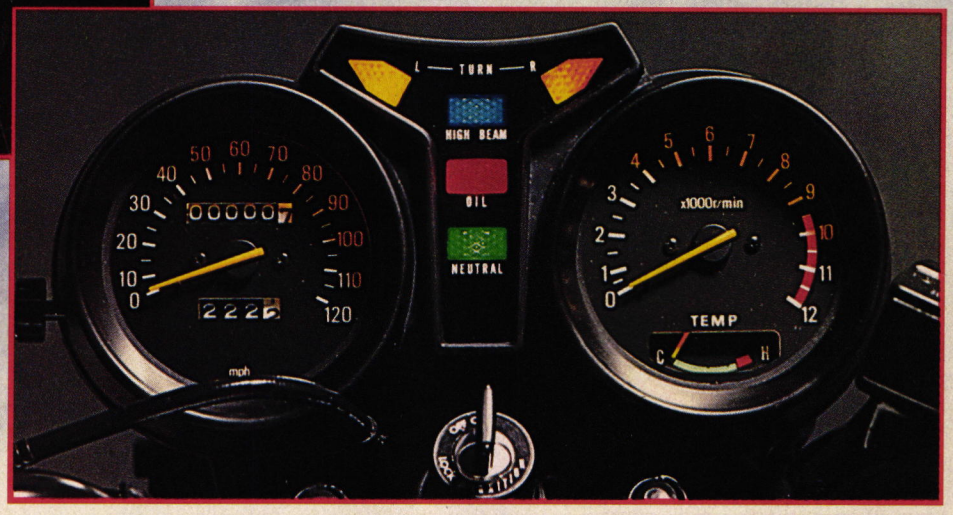


Passport to TZ-Fantasyland

With a Kenny Roberts-autograph riding position, a demanding 2000-rpm wide powerband, and a firm Monoshock rear suspension, it's just as well that the RD's American visa is stamped "For Racing Only."

Continued

YAMAHA
RD 350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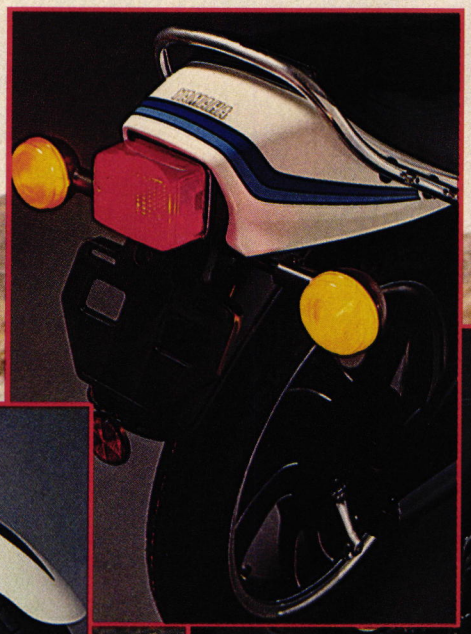
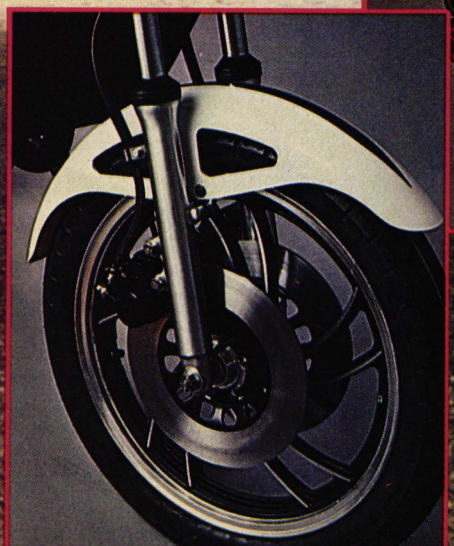
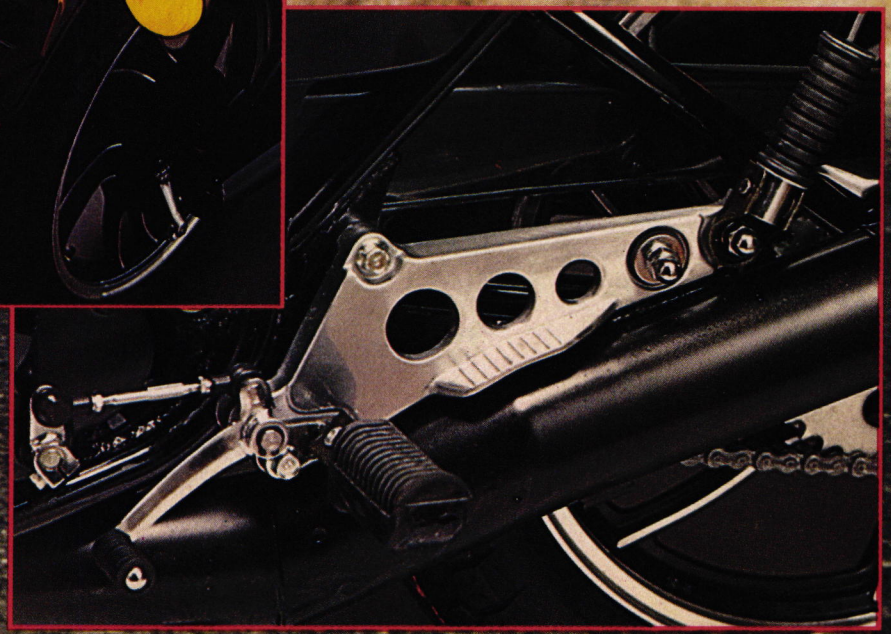






Portrait of a Two-Stroke Obsession

• Yamaha introduced its 350cc R5 in 1970 as a production replica of its racing bikes, meant to be the best-handling Japanese bike ever built. It was able to make its 350 trim instead of oversized like the YR-series because the 650cc XS-1 four-stroke had taken over the burden of being the "big" bike in the lineup. Yet even with this commitment to excellence in the R5, Yamaha was still worried whether Americans would understand the bike. So they made it purple and white and styled it heavily.

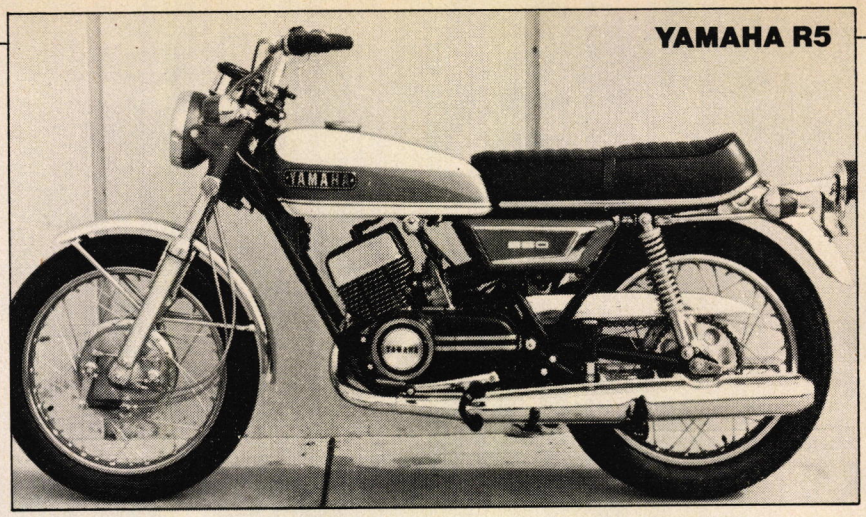
This sort of identity crisis plagued the Yamaha throughout its evolution from the R5 to the RD350 to the RD400. Its performance always earned the allegiance of sporting riders, but tastes changed and the motorcycle didn't, which meant fewer middlebrow riders found a reason to buy an RD over a Honda CB350. Sure, the RD would handle; but it wouldn't sell.

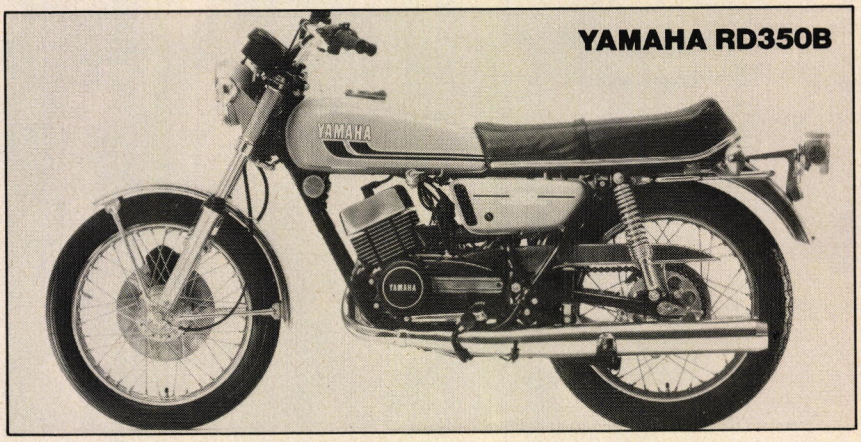
With the 1976 RD400C Yamaha tried one last time to make the RD palatable to a wide audience and failed. The RD400E and RD400F got the sporting togs that RD's deserved all along, but Yamaha had lost interest. Only 5000 units of the Daytona Special were sold in the U.S., guaranteeing its failure even though the bike found its natural audience and created renewed enthusiasm for 400cc sport bikes in general and RDs in particular.

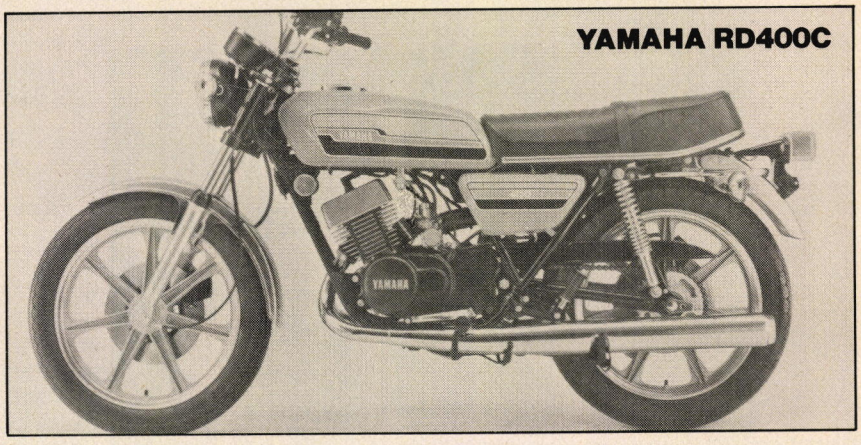
Ironically, the Daytona Special became the accepted choice of young punks in cast-off motocross helmets, OP shorts and tennis shoes just as Yamaha came to the conclusion that the bike's lack of a natural audience and expensive EPA certification made it a losing proposition in America. And so the water-cooled RD440 never made it beyond the prototype stages. Strangely enough, Honda found the 400cc sport market attractive enough to release the Hawk model just as the RD disappeared.

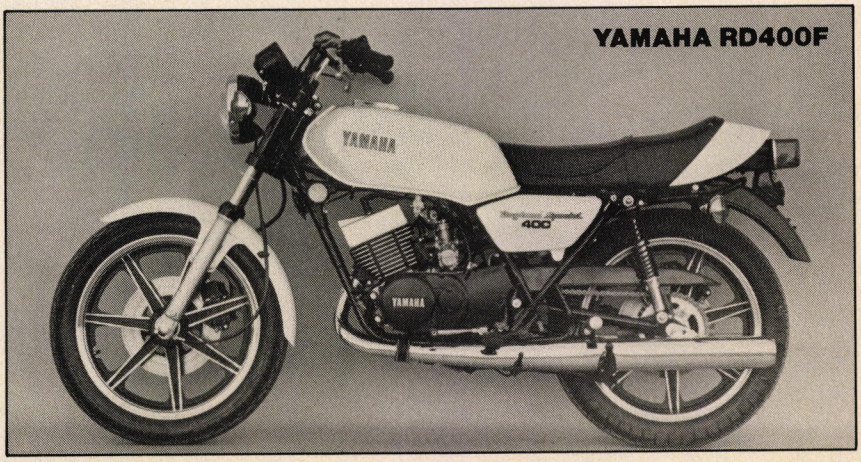
The accompanying pictures trace the evolution of the most exciting 400cc motorcycle ever built. With the clarity of hindsight, we can see now that Yamaha should have left well enough alone and continued to build the 350cc two-stroke twin just for sporting riders. Now it appears that the RD tradition must be handed over to the racetracks where RD production racers thrive still, reminders of times when racer-replicas could be purchased at your local Yamaha store.

—Michael Jordan


YAMAHA R5


YAMAHA RD350B


YAMAHA RD400C


YAMAHA RD400F

• When the R5 was introduced in 1970, it was a revelation. The racing RD56 produced the frame layout; racing also dictated the engine's design. And yet compared to contemporary two-strokes, the primative (pre-reed valve), peaky, vibrating, plug-fouling R5 seemed to be the model of docility, praised by many for its wide power-band. Only the drum brakes were regarded as sub-par.

The "American Wurlitzer" styling with its jukebox detailing did raise a few eyebrows, however, as did the pearl-and-lavender paint. Even so, the bike seemed as sleek as any GP racer of the time.

Importer: Yamaha International Corp.
P.O. Box 54540
Los Angeles, California 90054

Category	street
Suggested retail price:	$779
Engine type	two-stroke vertical twin
Port arrangement	one piston-controlled intake, four transfers, one exhaust
Bore and stroke	64.0mm x 54.0mm
Displacement	347.4cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	5-speed
Front fork/wheel travel	34mm stanchion tube diameter
Rear shocks/wheel travel	3-way adjustable spring preload
Wheelbase	52.8 in. (1341mm)
Seat height	31.1 in. (790mm)
Weight	326 lbs. (147kg)
Best ¼-mile acceleration	15.49 sec., 81.08 mph (130 kph)
Available colors	white with lavender

• In 1975, the RD350B represented the apogee of the RD's development as a performance bike. Reed-valve induction and a six-speed gearbox permitted the use of more radical port timing and a redline of 8500 rpm, 1500 rpm higher than before. A fixed hydraulic damper had been fitted to slow handling somewhat, but the bike still had a reputation for hair-trigger responses. A supremely powerful front disc brake was designed to keep you out of trouble, though.

Unfortunately, the RD350B arrived just in time for a fuel crisis and an emphasis on commuter bikes, which made it the wrong bike at the wrong time.

Importer: Yamaha International Corp.
6600 Orangethorpe Ave.
Buena Park, California 90620

Category	street
Suggested retail price:	$1211
Engine type	two-stroke vertical twin
Port arrangement	one reed-valve-controlled intake, four transfer, one booster transfer, one exhaust
Bore and stroke	64.0mm x 54.0mm
Displacement	347.4cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel travel	34mm stanchion tube diameter/4.6 in. (117mm)
Rear shocks/wheel travel	3-way adjustable spring preload/2.7 in. (69mm)
Wheelbase	52.1 to 53.2 in. (1323 to 1351mm)
Seat height	31.1 in. (790mm)
Weight	327 lbs. (149kg)
Best ¼-mile acceleration	14.5 sec., 90.0 mph (145 kph)
Available colors	orange with white

• With the 1976 C-model, Yamaha hoped to make the two-stroke acceptable to everybody. The larger, longer-stroke engine with reduced compression produced more tractable power and better fuel mileage, but at the price of a 1000-rpm lower rev limit and a slower quarter-mile time.

There were also many changes made to the chassis. First, the engine was moved forward to reduce a tendency toward wheelies. Then came cast wheels and disc brakes fore and aft. Softer suspension and anti-stiction bushings for the fork were part of the package. Most important to the RD were a new soft seat and rubber engine mounting.

Importer: Yamaha International Corp.
6600 Orangethorpe Ave.
Buena Park, California 90620

Category	street
Suggested retail price:	$1219
Engine type	two-stroke vertical twin
Port arrangement	one reed-valve-controlled intake, four transfers, one booster transfer, one exhaust
Bore and stroke	64.0mm x 62.0mm
Displacement	398.9cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel trave	34mm stanchion tube diameter/4.8 in. (122mm)
Rear shocks/wheel trave	5-way adjustable spring preload/3.4 in. (86mm)
Wheelbase	52.4 to 53.4 in. (1331 to 1356mm)
Seat height	32.1 in. (815mm)
Weight	357 lbs. (162kg)
Best ¼-mile acceleration	14.31 sec., 89.3 mph (144 kph)
Available colors	red and green

• Kenny Roberts rode the Daytona Special onto the stage at Yamaha's 1979 dealer convention, indicating that at last the RD had rediscovered its natural audience. Besides the styling and flex-free fork from the XS400, the strongest indication of its new performance aspirations was the relocation of the footpegs from a bracket beneath the pipes—which often levered the rear wheel off the ground in a corner—to a conventional mount.

Yet even with a new, torquier, more powerful engine came a harbinger of the RD's demise: A complicated air emissions linkage on carburetors and exhaust ports.

Importer: Yamaha Motor Corp. U.S.A.
6600 Orangethorpe Ave.
Buena Park, California 90620

Category	street
Suggested retail price	$1696
Engine type	two-stroke vertical twin
Port arrangement	one reed-valve-controlled intake, four transfers, one booster transfer, one exhaust
Bore and stroke	64.0mm x 62.0mm
Displacement	398.9cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel travel	35mm stanchion tube diameter/5.2 in. (132mm)
Rear shocks/wheel travel	5-way adjustable spring preload/3.8 in. (96mm)
Wheelbase	52.2 to 53.4 in. (1326 to 1356mm)
Seat height	31.7 in. (806mm)
Weight	355 lbs. (161kg)
Best ¼-mile acceleratic	14.16 sec., 90.2 mph (145 kph)
Available colors	white with red

fractionally quicker steering geometry, yet the difference between the chassis of the RD350LC and that of an RD400F is nothing less than astounding. For all its merits as a boy-racer, the RD400 combined hair-trigger steering with a soft suspension meant for freeway riding. A series of bumps at speed would unleash a diabolical wiggle from the rear end as the short-lived shocks worked against a flexible swingarm. In contrast, the LC chassis just hugs the ground while going around a corner. The Monoshock's impact on swingarm flex and rear-wheel deflection apparently is just as significant on a street bike as on a dirt bike. The RD350LC still steers with the same quickness Yamahas are noted for, but the slightly longer wheelbase and Monoshock rear suspension keep it from darting around like an RD400. The slightly higher *cg* imposed by the Monoshock also lends the bike a further measure of stability.

Suspension rates play a significant role in the LC's high-speed personality, as well. Occasionally, the Monoshock will prove a little short on rebound damping even for 160-pound riders, yet the damping is otherwise fairly firm, recalling an RD350 rather than the mushy RD400. The fork feels resilient but firm in much the same way. Naturally, this means you can expect a measure of harshness, especially in response to abrupt inputs.

When it comes to detailing, the LC's riding position produces the magic mean between braced and crouched, just like the Euro-XJ650 tested last month. The shape of the seat lets you move around on the bike with the effortlessness of Kenny Roberts. The gearshift linkage proves a little notchy and it's almost impossible to locate neutral because of the gearbox's weak detents. The powerful but progressive dual-disc front brake is capable of standing the bike on its nose without locking the front tire, making the rear brake largely ornamental. Only the Yokohama tires fail to live up to the TZ image. They skitter and slide long before the centerstand comes close to scraping the pavement.

Once you cut to the quick of the RD350LC's personality, you have to admit it's probably not the perfect motorcycle for everyday use. As one Yamaha spokesman commented, it's built for people who appreciate two-stroke power—and that means a kind of exaggerated peakiness that's supposed to be synonomous with high performance. Make a mistake while riding into a corner and you must downshift at least twice to regain your momentum. And after about 30 minutes, the handlebar gets very tingly and the suspension's harshness becomes apparent. Then

Continued

The Smuggler's Handbook

• If you plan on bringing a funny motorcycle—like our Yamaha RD350LC—into the country for use other than as an expensive wall display, you will have to deal with three branches of the Federal Government: Customs, Department of Transportation and Environmental Protection Agency. Prepare yourself for an arduous lesson in Practical Civics. Be ready to have your long distance calls put on extended hold or simply disconnected—ours were. Don't be surprised at conflicting information—we no longer are. Remember, above all, the feds wrote the rule book and absolutely own the game and, like the man said, it's the only one in town. You will play it their way, by their rules, or you simply won't play it at all. If this sounds like them against us—when they're *supposed* to be on our side—it is. It's also fact. Accept it before you begin anything else. Or forget about that exotic motorcycle.

Jas Rarewala accepts and deals with it. In return, he has a thriving business bringing expensive, exotic cars into compliance with U.S. regulations. How thriving? If his firm, Automotive Compliance Industries (25518 Frampton Ave., Harbor City, California 90710, (213) 539-4880) brings your Ferrari Berlinetta Boxer into DOT and EPA compliance the tab will be $22,000. That's above the price you pay for the car. It's not easy or cheap, but it is possible.

It is also possible with bikes. Since there have been few cases of single, non-complying motorcycles brought into the country for street use, there is little experience to draw on in this regard. But fortunately, according to Rarewala, much of what has been done with cars can be applied to motorcycles; the regulations apply to both four and two wheels, only the specifics differ.

When the bike arrives in the United States you must fill out two sets of forms to get it through Customs; NHTSA HS7 and EPA 3520-1. On these forms are several boxes to check, indicating your appraisal of the bike's intended use, such as racing, display, research, and so on. For an individual, the easiest way to get it out of Customs is to tell them you want to race it. If the bike is obviously a racer, there's usually no problem and, after paying the necessary duties and fees, you should be able to load it onto your truck. However, if it is not obviously a racing bike things can be more difficult. This used to be an old tongue-in-cheek ploy, in which you told some unsuspecting Customs official you really, honestly, sir, were going to race the thing—and then you drove home laughing.

No more. As Rarewala says, "Customs determines what a race machine is. They're not stupid; they've gotten very smart about it." Which means experience has taught them how to spot ringers. So, if you tell Customs you are going to use an obviously production bike in racing, be prepared to show your competition license, to back it up with solid information on the class and type of racing, and to sign an affidavit that the vehicle will never be registered for street use. With CYCLE GUIDE's RD350LC there wasn't much trouble. That does not mean it will be easy for everyone else.

For potential street use, however, on both the DOT and EPA forms you will have to check the box indicating the bike is under bond, pending compliance. For assistance, we suggest contacting a customs broker, preferably one who deals with vehicles. Customs will require a bond equal to the full value of the bike plus duty and you must have the original bill of sale and registration from wherever you bought it to prove ownership. (If you originally got it through Customs under the pretext of racing, you *are* allowed to verify you have changed your mind. However, you must go back to Customs and begin again with this procedure; in effect, having it enter the country again.) Once you have posted the bond and filled out the forms you can take it out of Customs. "And now," says Rarewala somewhat ominously, "the clock starts ticking." You have 120 days to bring it into compliance with the EPA and DOT. Within about four weeks both agencies will send you a packet of forms and information on what is required. If you wait until then to start you're down to less than 100 days. For a preview of the applicable DOT regulations, find yourself a copy of the 1191-page Code of Federal Regulations, Title 49, Parts 200-999. You are concerned with Part 571, which applies to safety standards.

DOT is interested in structural, mechanical and safety features, such as lighting, instrumentation, location and operation of controls, tire and wheel specifications, and the braking system. On some bikes these will be minimal concerns. On others it can mean drastic re-engineering of the motorcycle—the shift lever must be on the left and shift upward, the speedometer needle must rotate clockwise and have mph designations on 10-mph increments with marks showing 5-mph increments.

EPA wants the air clean, and satisfying emissions standards to make your bike streetable will be tougher than complying with DOT regulations. Here, you need an expert, some person or organization with the capability to design, build, test and verify an emissions control system that will pass requirements. To understand the depth of this, remember that Yamaha decided not to bring the 350 into the U.S. largely due to emissions regulations. This does not mean that certifying the 350 was impossible, simply that the expense involved was not justifiable when compared to the potential return on sales.

If you have a bike that resembles one available as a U.S. model, it will be easiest to have the manufacturer install all those necessary parts to make it, essentially, a U.S. version. If you don't, you're on your own, which is why you need someone like Rarewala. And it isn't enough the bike meet the standards, it must pass them in a certified lab for proof; this lab test alone can cost nearly $1,000.

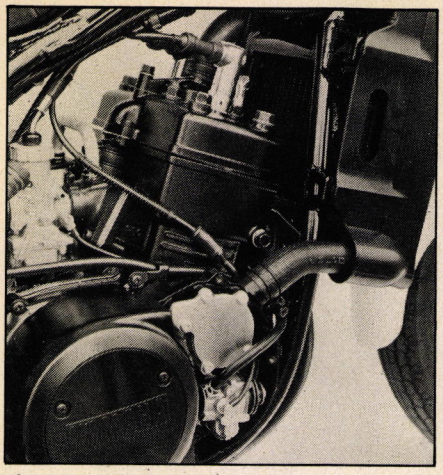
After satisfying DOT and EPA requirements, and submitting all the necessary paperwork certifying so, if DOT and EPA each accept your test results and engineering data they will mail a bond release to Customs, which then contacts the bonding company, the bonds are released and at that time the bike is legal. A trip to the local DMV to register it and you're home (but not free). One important point: The vehicle must meet only those standards in effect on its date of manufacture, which is an advantage to bringing in an older bike subject to less stringent regulations.

By the way, it is possible to register and license the bike with the local DMV without satisfying either DOT or EPA, since not all arms of the government know what the others are doing. Get it out of Customs under the pretext of racing, take the bike, registration, bill of sale and manufacturer's statement of origin to the DMV, verify the serial numbers and ownership, and you have a license tag. But it's not the smart move. If you let it go at that and don't bring the bike into compliance within 120 days and are caught, you've got big troubles. You might be granted another 60 days, but that definitely is the limit, and at that time you forfeit the bond, suffer a fine, and Customs will seize the bike and give you 24 hours to provide an address out of the country where you want it shipped. You also get to pay for shipping. And at the worst case the bike can be shredded into oblivion.

What about our 350? The liquid-cooled two-stroke poses special technical problems the factory chose to bypass, but Rarewala thinks he could probably make it street legal, by treating the exhaust gases downstream, for less than $1,000. Combined with the lab test fee, that would have the bike streetable for less than $2,000 total.

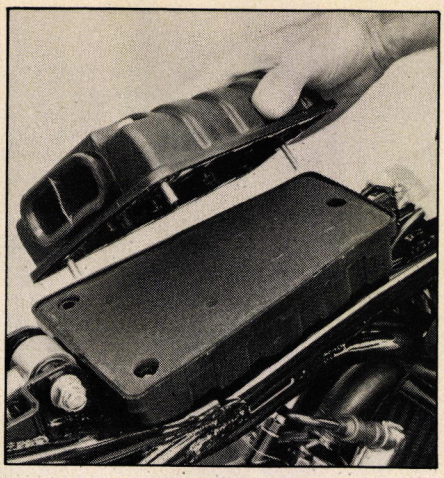
Dealing with the Feddle Gummint can be an exasperating chore at best, one where you often have to swallow hard. If you can put up with it, even while watching—and fighting—the spectre of your-tax-dollars-not-at-work, and have the cash to pay for every step along the way, the reward can be the enjoyment of owning something that you won't see on every street corner.

—Don Fuller



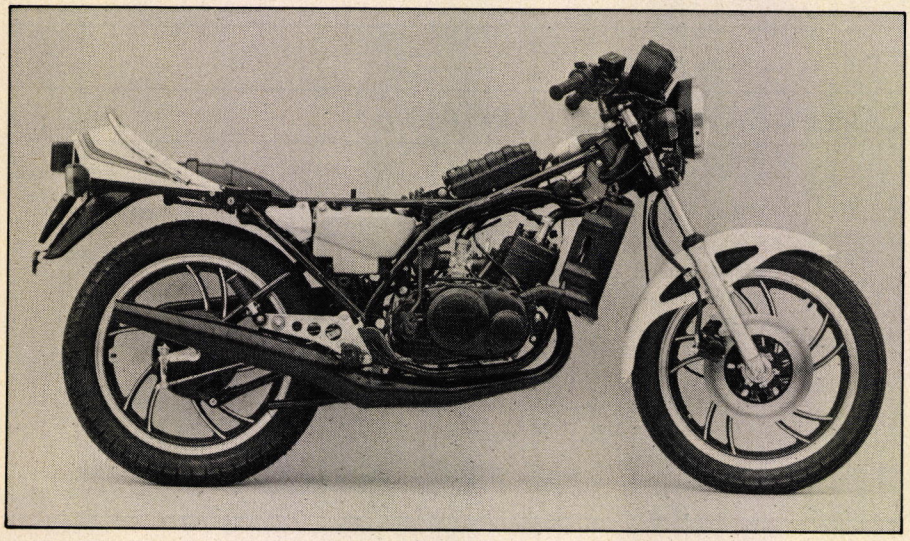
Finless twin is all business

Saving weight with plastic covers.



Foam-filled air box atop the frame

Safeguarding a 2000-rpm powerband.



Five-way adjustable preload Monoshock stuffed in a TZ-inspired frame

Rebound is a little soft, but still, closest yet to racetrack standards.

there's the fact that the engine refuses to cruise at 60 mph in anything taller than third gear. Also, you have to fold up the right footpeg before you can kick the engine over. The RD350LC is simply too much like a race bike to please very many people as everyday transportation.

Yet at the same time, the LC offers racebike virtues that express perfectly what we mean when we say high performance. When you strafe an apex on the LC, both ends of the motorcycle work together in a balanced way no previous RD could ever duplicate. Transitions are so easy you'll think you have the talent of a GP rider. Every move the LC's chassis makes is crisp, sure and confidence-inspiring. It's immensely satisfying to skewer an apex with a rapier-like thrust instead of thrashing away with some unwieldy cutlass of a hyperbike.

This is the quality CG's riders have longed for ever since we saw one of the first matte-black LC prototypes slip out of Yamaha's Iwata R&D facility headed toward the Yamaha test course—one of the most demanding roadracing tracks in the world. Even though the LC owes as much to previous RDs as to the TZ racers, the LC lives up to this promise of raceworthiness. As one of the reference points when high-speed handling is discussed, it reminds us of the benefits to be derived from bikes with light weight and lower center of gravity than the average DOHC four-stroke.

It might be true that the two-stroke street bike is irrevocably gone from the shores of America. It could be that Europe and Japan understand the language of the two-stroke better than we can. Even so, the LC proves that the RD-series should be perpetuated in this country in chassis if not in engine. Because as long as Yamaha builds roadracing bikes, there will be hard-core sporting riders who demand a piece of the action. The RD350LC gives it to them, and in a language that everyone—not just two-stroke devotees—can understand. •

Ride Review

• A world without water-cooled RDs would be noticeably duller, a few steps closer to living in shades of tan and gray. No other motorcycle allows you to so nearly reproduce the sensations of a full-on roadracer while still dangling the carrot of street legality—at least in some more-civilized countries. I'm fascinated with the RD's roadracy kinesthetics—incredible lean angles, smooth, faultless braking and the letter-perfect riding position—but that doesn't mean that I'd want it on the street. Racers belong on the racetrack, even thinly disguised racers like the RD. Coaxing one through slow-moving traffic would be hell. The powerband is thinner than a bureaucrat's promise; fall off the 7000-rpm ledge and you need serious gearbox rowing to keep moving. It's just too much effort to be fun. So give me an LC, Yamaha, but let me keep it at the track. *—Larry Works*

• The first lap around Willow Springs told the story: The RD350 L/C is nothing more than a race bike. It has the same basic powerband as my old—and incredibly fast, thanks to some magical porting—air-cooled RD350 racer. The suspension is taut, and when you point the front wheel into a turn it goes exactly where you want it.

Port specs and trick suspension aside, the true measure of a racer is how quickly it circles the course. And here, the stopwatch is the final authority. My best L/C time would have put me in the top 10 of an AFM 430cc production sprint. What slowed me down during our testing was that the stock Yokohama tires slip and slide through turns. Give me a set of good treads, and I could stop the clock at trophy-winning time. That's what I appreciate about the L/C—it's race-ready with just good tires and fresh plugs. *—Dain Gingerelli*

• The RD350LC could bankrupt me. It wouldn't be expensive to buy, but I don't think I could afford the speeding tickets. The little waterpumper doesn't have the sheer speed potential of a CBX or GS1100, true, but it will still exceed twice the legal maximum speed limit.

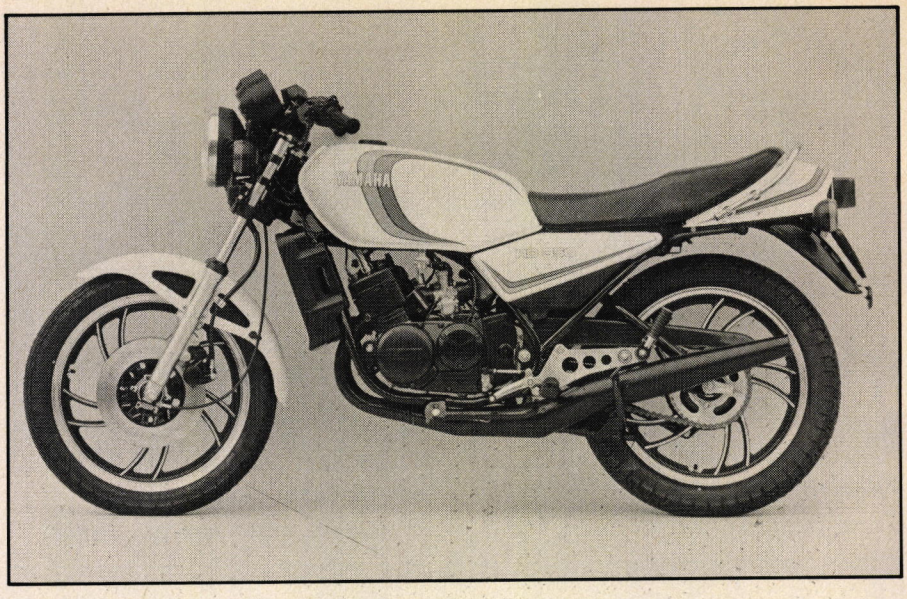
What is important is that it almost *demands* to be ridden at those speeds. It does more than look like a TZ roadracer, it *performs* more like a racer than any other street motorcycle I've ever ridden. That means narrow powerbands, high revs and not a little clutch slipping.

All of which adds up to a pretty unpleasant street motorcycle. But who cares? This is the world's best repli-racer and I loved every high-revved moment aboard it. The price of owning one wouldn't be too high if only I could get a season speeding ticket.

—David Dewhurst

Continued

Yamaha RD350LC



SPECIFICATIONS:

IMPORTER: Yamaha Motor Co.
2500 Shingai Iwata-Shi
Shizouka-Ken, 438 Japan

CATEGORY: street

SUGGESTED RETAIL PRICE: N.A.

ENGINE

Type ..... two-stroke vertical twin
Port arrangement ..... one reed-valve-controlled intake, four transfers, one booster transfer, one exhaust
Bore and stroke ..... 64.0mm x 54.0mm
Displacement 347.4cc
Compression ratio (corrected) 6.2:1
Carburetion ..... two 26mm Mikuni slide/needle
Air filter ..... washable oiled foam
Lubrication ..... oil injection
Starting system ..... primary kick
Ignition ..... flywheel magneto CDI
Charging system ..... 12-volt; AC generator, voltage regulator/rectifier

DRIVETRAIN

Primary drive ..... helical gears; 2.870:1 ratio
Final drive ..... #530 chain (⅝-in. pitch, ⅜-in. width); 2.438 (16/39) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.57	17.99	4.1
II	1.77	12.44	6.0
III	1.31	9.22	8.0
IV	1.08	7.58	9.8
V	0.96	6.73	11.0
VI	0.88	6.22	11.9

SUSPENSION/WHEEL TRAVEL

Front ..... 32mm stanchion tube diameter/5.5 in. (140mm)
Rear ..... 5-way adjustable spring preload/3.8 in. (95mm)

BRAKES

Front ..... dual single-action hydraulic calipers, 10.5-in. (267mm) discs
Rear ..... drum, single-leading shoe, rod-operated

TIRES

Front ..... 3.00S18 Yokohama Y-986
Rear ..... 3.50S18 Yokohama Y-987

DIMENSIONS AND CAPACITIES

Weight ..... 328 lbs. (149kg)
Weight distribution ..... 46.6% front, 53.4% rear
Wheelbase ..... 53.5 to 54.9 in. (1359 to 1394mm)
Seat height ..... 30.8 in. (781mm)
Handlebar width ..... 27.5 in. (699mm)
Footpeg height ..... 12.8 in. (324mm)
Ground clearance ..... 5.8 in. (146mm), at centre stand
Steering head angle ..... 27.1 degrees from vertical
Front wheel trail ..... 4.02 in. (102mm)
Frame ..... tubular mild steel, double front downtubes
Oil capacity ..... 1.7 qt. (1.6/)
Fuel tank ..... steel, 4.4 gal. (16.5/), including 0.52 gal. (2/) reserve
Instrumentation ..... tachometer, speedometer, odometer, tripmeter resettable to zero, temperature gauge

PERFORMANCE

Speedometer error, 30 mph indicated ..... 30 mph actual
Speedometer error, 60 mph indicated ..... 58 mph actual
Best ¼-mile acceleration ..... 13.78 sec., 97.57 mph (157 kph)
Top speed (calculated) ..... 113 mph (182 kph)
Stopping distance from 30 mph ..... 34 ft. (10.4 m)
Stoppng distance from 60 mph ..... 126 ft. (38.4 m)

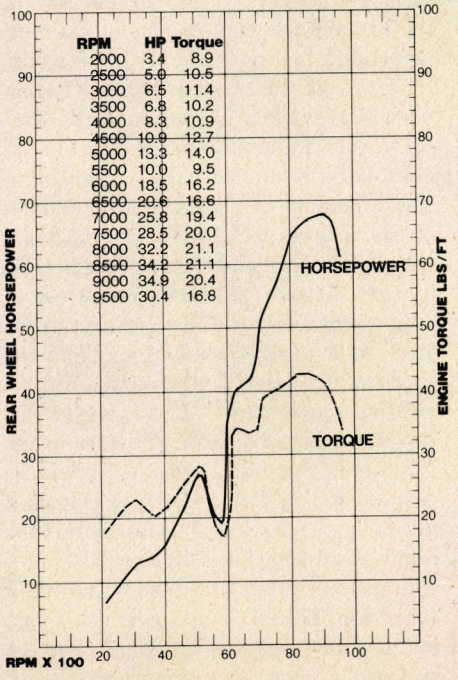
AVAILABLE COLORS: blue/white

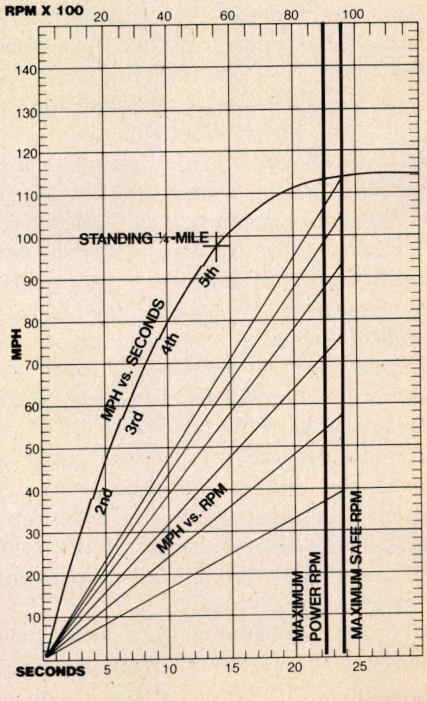
All weights and measurements are taken with machine unladen and fuel tank empty.

COMPARATIVE TEST DATA:

Make	Quarter-Mile, sec/mph	Top Speed, mph	Weight, lbs	Stopping Distance From 60mph, ft.
Yamaha RD350LC	13.78/97.57	113	328	126
Yamaha RD400F	14.16/90.18	98	355	129
Honda Hawk CB400T	14.37/88.60	100	391	139
Suzuki GS450ST	14.09/92.50	100	397	127
Yamaha SR500E	14.98/84.20	92	364	132
Kawasaki KZ550	13.45/97.10	103	426	150

PERFORMANCE:





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MOTO-G: 1000/Norton 850
SUZUKI: GT250, 380, 500, 550, 750, GS400, 550, 750, 1000, 1100
YAMAHA: RD350, 400, TX/XS360, 400, 500, 650, 750

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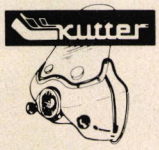

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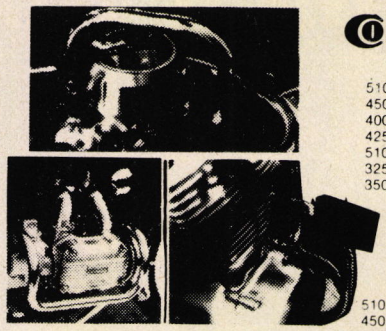

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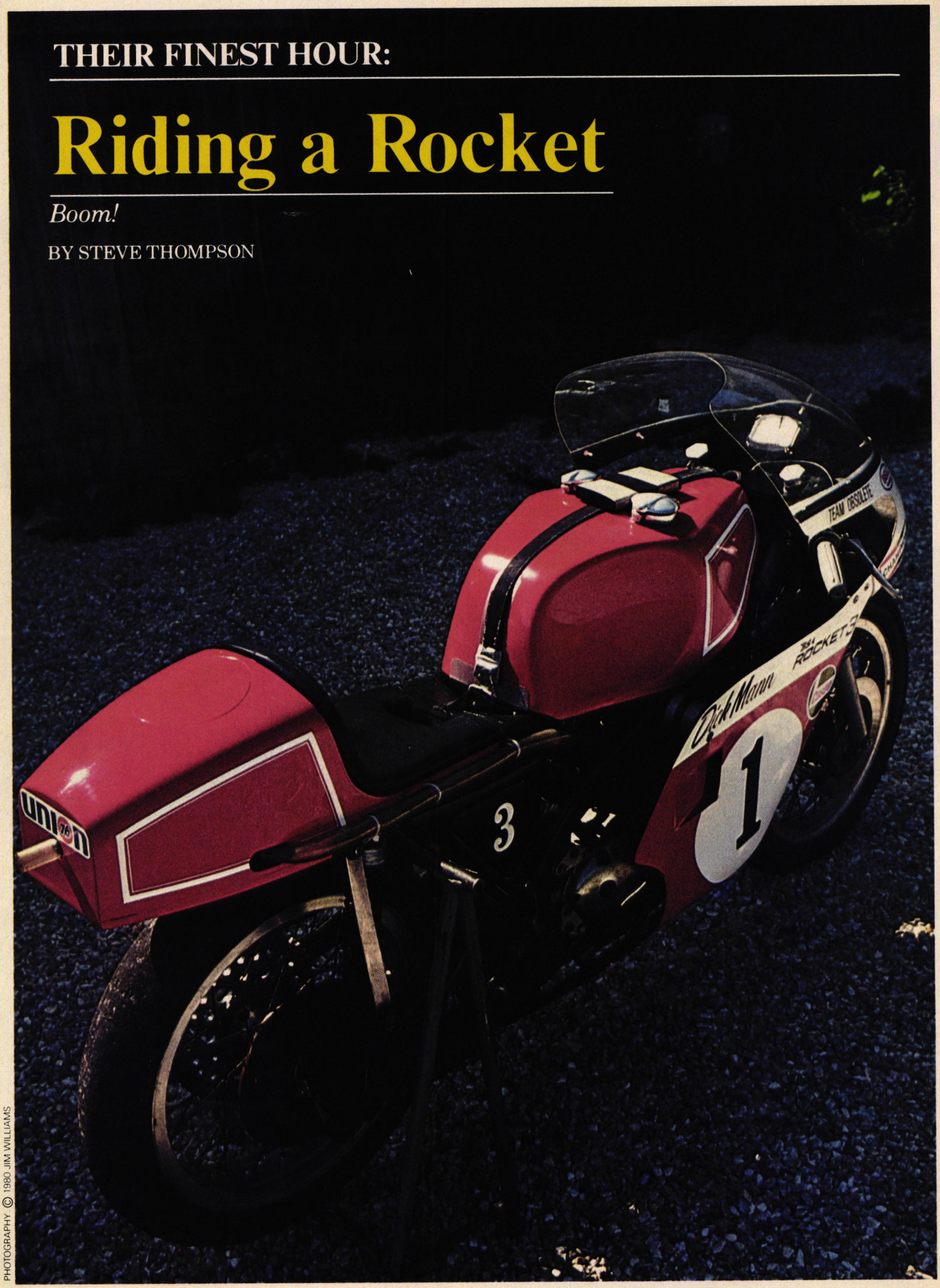
THEIR FINEST HOUR:

Riding a Rocket

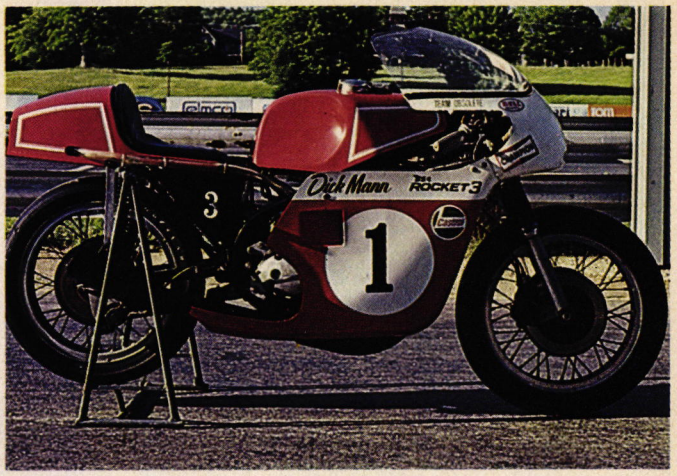
Boom!

BY STEVE THOMPSON



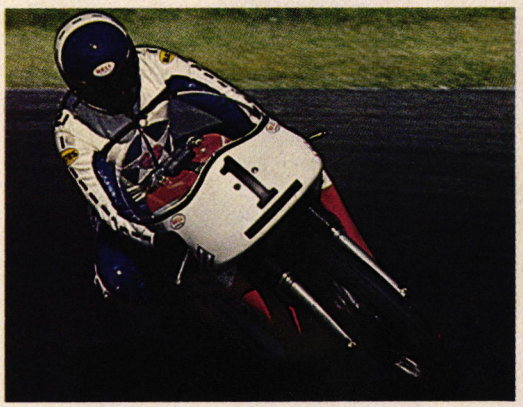
PHOTOGRAPHY © 1980 JIM WILLIAMS

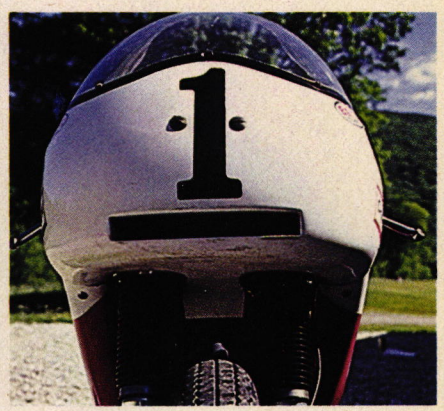
THE LAST TIME
MARCH 1971:
DAYTONA INTERNATIONAL SPEEDWAY



Squinting narrow-eyed through his clear shield, Bugsy Mann has finally outlasted the stylists, the jackrabbits and the two-strokes. On lap 41, he takes over the lead in the Daytona 200 from Paul Smart, whose Triumph Trident begins puking out a plume of blue smoke. No one could tell—even then, at age 37, Dick Mann didn't show much emotion on the racetrack—but Bugs must have smiled at the thought. He was going to do it again. Two in a row. Last year—1970—he'd won the race on a Honda 750 Four, shaking up the roadracing establishment that had expected Harley-Davidson or Triumph to win. This year, after his TT victory on a BSA twin only weeks before at the Houston Astrodome, Bugs is about to win Daytona one more time.

The last laps of the 200 are clicked off in classic Mann fashion: even, fast, smooth. He looks a little awkward on the BSA Rocket-3; whereas the Englishman, Smart, hangs his entire body off to the inside of a turn, Bugs sits up a bit, leans the *other* way and sticks his knee out into the breeze, foot sideways. The style costs him once, too, when he tangles with a pylon, losing ground but not his foot. He ain't purty, say the insiders, but he damn sure is Bugs. Which is to say: grimly determined, fast and always *there*.





When the checkered flag drops, *there* is out front. Smiling faintly now, Bugs wheels the silent red BSA into the winner's circle. Following him are Gene Romero and Don Emde, Triumph- and BSA-mounted respectively. It's a wild scene: a Brit-bike sweep, sans the vaunted Europeans who were going to show the dumb Yanks the right lines. No Hailwood. No Smart. Not even Aussie Kel Carruthers. It's a BSA-Triumph day, the first of many in 1971. But it would have taken a clairvoyant to know that this scene of pride and joy was the last that a BSA, Triumph, Harley, Honda or any other four-stroke roadracer would enjoy at Daytona. After 1972, they would be competitive no more. The Rocket-3 would be the last four-stroke to win the 200, and Dick Mann—in 1965 the first rider ever to win an AMA National on a two-stroke—would be one of the *last* to win a roadrace National on a *four*-stroke.

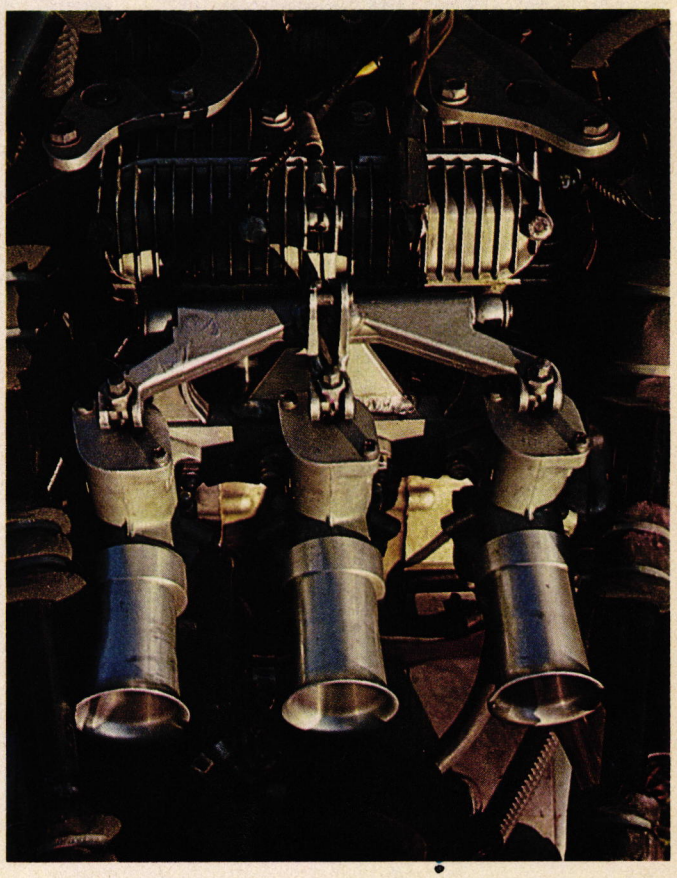
But from victory circle on a certain perfect Sunday in March 1971, who could tell that?

PLIMPING IT
JUNE 1980: LIME ROCK, CONNECTICUT

The clutch is going to mean trouble at this tiny little racetrack. Real trouble. I squeeze hard and the beat-up chromed lever gives grudgingly. Half an inch. I look questioningly at Dave Roper, Team Obsolete's chief pilot.

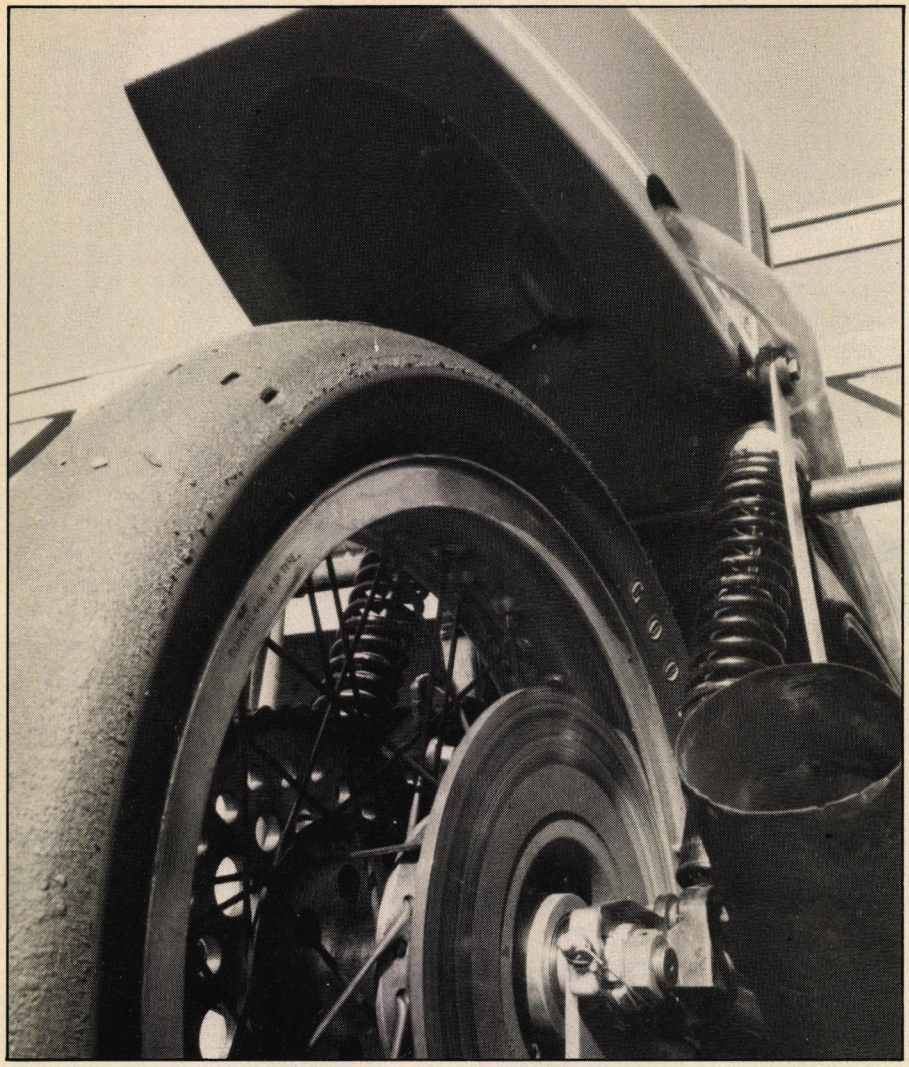
"Is this the normal clutch pull?"

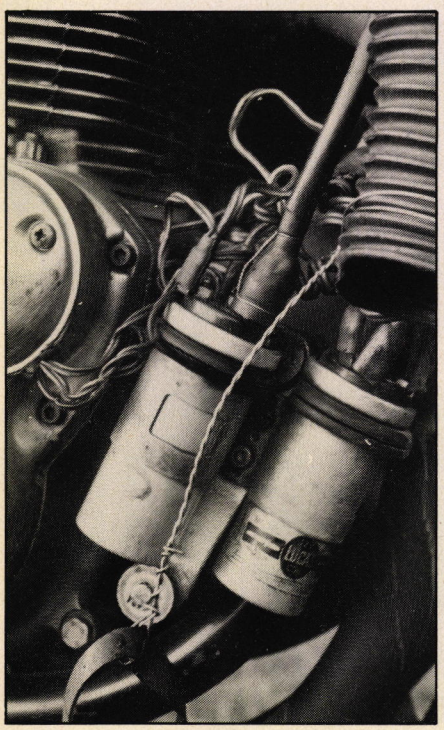
Roper grins and ambles over from his G50 Matchless. Even on this sunny Tuesday in the green splendor of Connecticut, I see Roper in sepia tones, as though he were from an old book on Thirties racers. The same laconic expression, the same lanky, fluid gait. Skinny as a rail, tough as nails. Big, scarred hands. The classic racer. Perfect for Rob Iannucci's Team Obsolete. *Continued*



Vintage bank of Amals on Dick Mann's BSA Rocket 3

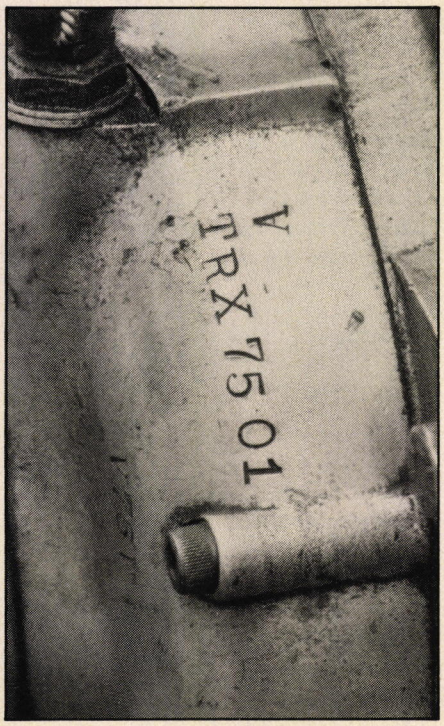
Dividing No. 1's four-stroke power by three carburetors.





Old-World Order in the BSA camp

Lucas electrics and dangling wires.



TRX 7501: engine identification

Marked for one purpose only—racing.

He pulls the lever, gently, firmly. Nods. "Yup. It's a little stiff. Gets easier on the track. When it warms up." He smiles shyly.

Ah. When it warms up. I stand back to take in all of the red-and-white BSA Rocket-3. What will it take, I wonder, to warm this thing up? Talking to Paul Dean about this bike, Dick Mann has said that it was one of the most reliable racing machines he ever rode. And yet . . . and yet, even for Triumph race-wizard Doug Hele to squeeze 84 bhp at 8500 rpm out of this three-cylinder pushrod motor, even for American team chief Danny Macias to keep that power available all the time, the 750 must be stressed to within an inch of its now-decade-long life. Twelve-to-one compression ratio, sans squish bands. Cast Hepolite pistons, polished and lightened. Polished crank, opened-up oil passages. Steel-tipped pushrods. Titanium spring retainers atop stock springs. All the ingredients—all the standard tricks, really—of a heavily breathed-on OHV motor. It was good for 165 mph in 1971, even in this 370-pound configuration. Indeed, what *will* it take to warm this thing up?

Rob Iannucci joins me in contemplating the bike. For him, this machine isn't just a ride, it's a way of life. Back at his shop in Lodi, New Jersey, Iannucci has the makings of a classic-bike dreamworld. He's decided that his law practice isn't as important as what he calls his obsession. To wit: British racing bikes, their collection, restoration to race-ready status and ultimate use once again on the racetrack. Hence Team Obsolete. And hence his red-and-white Rocket-3 standing here on pit road at Lime Rock.

Iannucci says he started looking for the bike in 1976, that it took him a year to find and acquire. Why this particular bike? Many reasons—it was British, it was the last four-stroke to win Daytona and . . . *and* it is certain to become a gold-plated investment. Iannucci won't disclose the price he paid for it when he bought it from Les Edwards and Ed Coyle of San Jose Cycle Imports. He says that the bike sat for a long time in the West Coast Triumph HQ in Duarte after being retired from factory battle in '73. Then Triumph's Bob Tryon sold it, along with a great deal of other race-shop equipment, to Edwards.

Whatever Iannucci's reasons for rescuing this milestone motorcycle from a lesser fate, I'm glad he had them. Because they have given me a chance to stand here in the warm Connecticut sunshine and touch the past, a little, and maybe to see whether there's a basis in fact for the optimism of the four-stroke freaks' assertion—fer-

vently made, every year—that *next* year will see a revival of the type, maybe even at the Daytona 200. If so, there'd be a fine irony in it, since in that event exactly a decade will have passed since the last of the breed owned the winner's circle.

The BSA *looks* the part, anyway. I've loved the famous Lowboy Letterbox Triumphs and Beezas since I first ran up against them racing in England in 1971. Then they seemed the leading edge, in every way save valve operation. Consider: They were the first factory racers with triple-disc brakes, the first with a collected exhaust system (just like you've got on your Honda Four, no doubt), the first to ram cooling air through a nose-cone-mounted oil cooler (hence the "letterbox" nickname), the first to sweep the swingarm-to-steering-head frame tubes *around* the engine (*á la* Motoplast Laverda, TZ750 and a host of others), one of the first to feature extremely wide-based triple clamps (eight inches, center-to-center), and among the first to use quick-fill gas tanks at Daytona. The original frames, says Iannucci, were built in a single batch in England by Rob North, but later, similar versions were manufactured in California under BSA/Triumph auspices. Wind-tunnel tests at CalTech helped finalize the aerodynamics, and such elaboration illustrates well the determination BSA/Triumph had, between 1970 and the '71 Daytona event, to win all the marbles.

Today's TZ750 pilot would probably scoff at the result. He'd look at the short-travel fork and shocks (four inches fore, three aft), the tubular swingarm and, of course, that great architectural lump of a motor, and he'd write the thing off. But as track owner Jim Haynes clears the circuit for us, I'm not so sure. I've ridden TZ750s, Kawasaki KR750s, the works, and this thing still looks plenty serious to me. In the screening room of my mind, I keep hearing that awe-inspiring moaning howl these machines made as they rocketed around the racetracks. They sounded then like a cross between a Formula Two car engine—a DOHC 16-valve screamer—and a Grand National NASCAR stock car, with a hint of Honda Six thrown in. Jody Nicholas, commenting on the sound at the Daytona 200 in 1971, said that when he was behind one of these triples, the noise caused him physical pain. You don't scoff at a machine like that. Not if you're about to ride it. And not if the clutch lever feels like it's welded to the handlebar.

Suddenly our time is up. We have to bump the BSA into life and use up the single hour Haynes has given us. We've only run the bike a few moments, back at the Lodi HQ, and then only after a full morning's frustrating work trying to track down an ignition gremlin. Dave Roper bumps it off—it fires instantly—and gently raps the throttle a few times. The familiar, haunting moan booms out across the verdant hills of Connecticut. In nearby Sharon, seat of the elite, they must be eyeing one another and wondering what sort of monster makes *that* kind of noise. The Formula Atlantic cars, the fierce little sedan racers, none of the traffic on the course up to then has been quite so . . . *eerie.* Roper nods, flips down his visor and scrunches down familiarly in the BSA's high-back Daytona seat. He raises the gear lever gently and rolls off, the monster rumbling. Halfway up the pit road, he clears it out and accelerates smoothly away.

In the quiet afternoon, his progress around the short course is easy to follow. The howl rises and falls, and then he's past, tucked in and clean, right up to the final braking mark for the infamous Hook, the endless righthander that unseats so many racing egos every year. Boom, blat, boom again. Suddenly he's in the pits. It's my turn.

"Feels fine," he shouts into my helmet, "track's okay. Have fun." He smiles as I work myself awkwardly onto the seat while Iannucci blips the throttle.

All at once I know why people looked so odd racing this bike. The wide triple-clamps set the clip-ons far apart. Between your knees is a huge alloy tank, tall enough to rest your chest upon. The footpegs are set just aft of the swingarm pivot, and high, very, very high. The seat is low, the grips almost in line with the seat bottom. Result: You sit with your feet jammed under your

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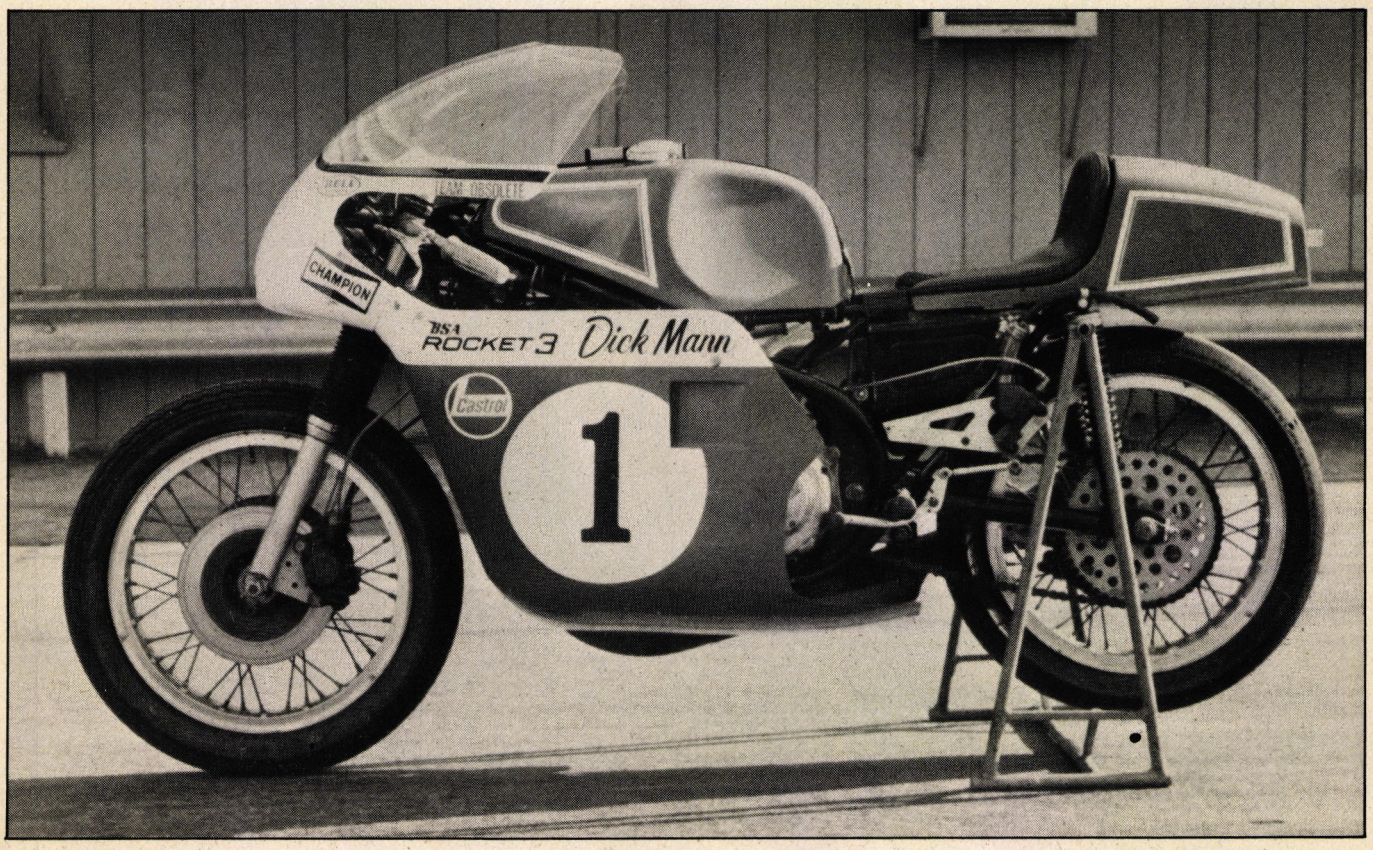
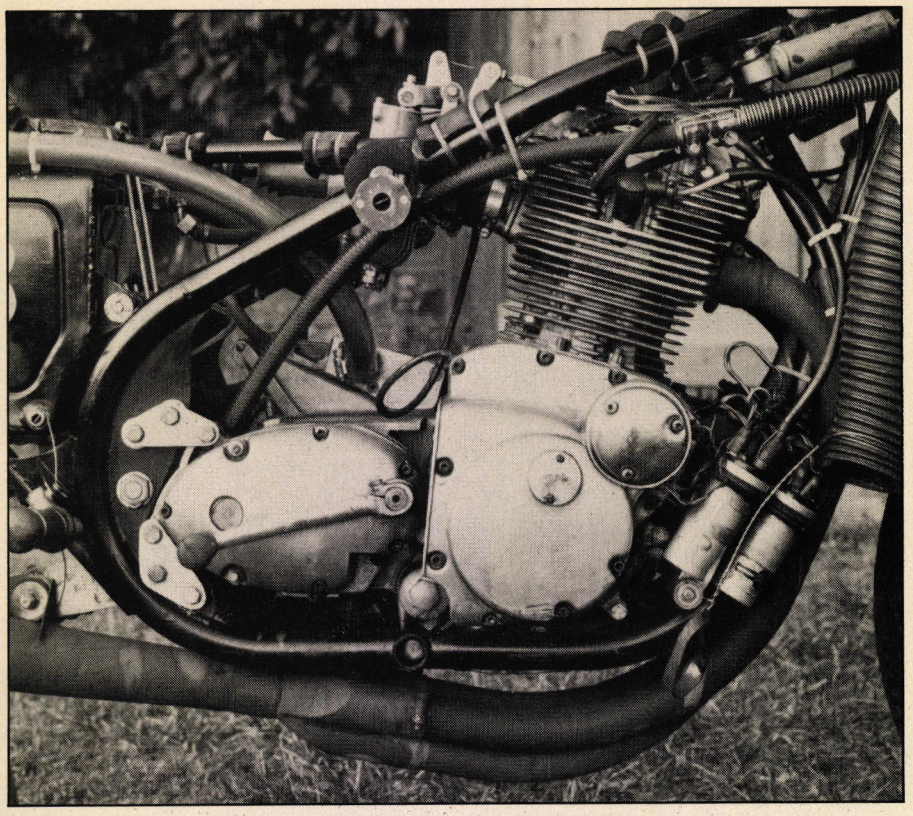
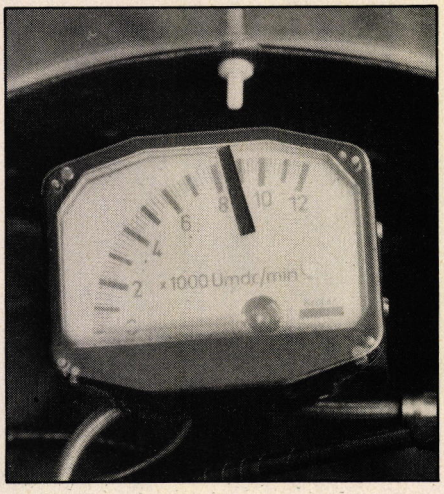
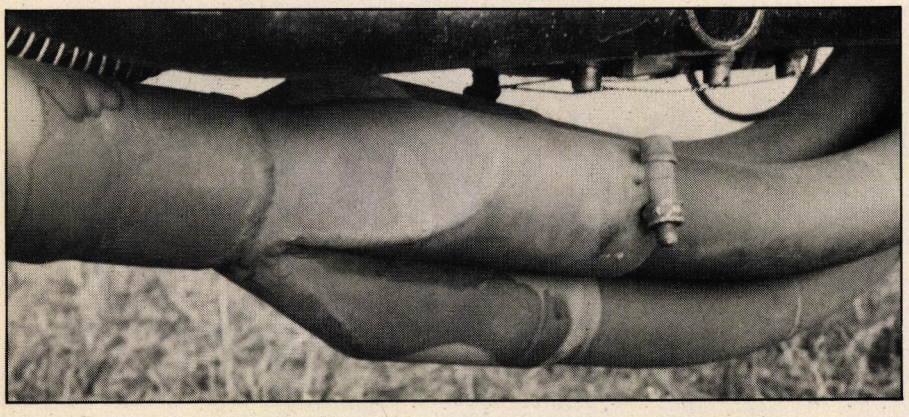




Lowboy frame stripped naked of the red-and-white fiberglass blouse

By today's two-stroke standards, the Beeza triple is very much obsolete.





Tucked beneath the frame is roadracing's original collector exhaust system

Gathering all the exiting noise for one final 'boom!'

butt, your arms stretched out nearly straight to grasp the fat gray grips. It flashes through my mind as I wriggle into position that a little rider like Mann must have dreaded racing this thing without the extra cushion he fabricated. I'm six feet tall, and it still stretches me out.

Now the clutch. I squeeze, and surprise! Roper is right. The effort is still high, but not impossible. Gently up on the gear lever. It's been eight years since I've had a righthand-shift racer on a track, and Iannucci has warned me that despite the modified shift plate and pawls, this bike tends to overshift. Uncomfortable, I nod and they step back. I feed in the clutch and ease on the throttle.

Something happens, right there in pit lane. Something special, something I'd all but forgotten about. It has to do with symbiosis, really, and in racing it makes the difference between just going fast and winning. Right there in pit lane, while I'm trying to get the controls worked out, trying to burn the Krober tach's picture into my mind so I don't have to concentrate on looking at its redline, right there, in the first twenty seconds I'm on the bike, it reaches up, enfolds me and I feel the presence of a machine that's really special.

I ride at street speed for a little while, getting familiar again with the twisty, bumpy Lime Rock track, which I haven't seen in over two years. Through the Hook's undulating, patchy surface. Out to the edge, where the looping rubber marks record four-wheel blunders, then to the slick lefthander, the delightfully banked righthander and up to the jump, the fast righthander followed by a hill gentle enough to walk up easily, but with a tendency to pitch fast cars into the air, uncontrollable and upside down. Then another fast righthander and the even faster last turn before the straight. Me and the old Beeza, getting acquainted. How much throttle? How much brake? In back, a Goodyear slick with not too many hours on it gives me confidence, and a Michelin PZ-2 keeps the front end steady. Impressions to lap 10: a smooth, even powerband, stiff suspension, delicate shifter, awkward riding position. I come in on Iannucci's signal.

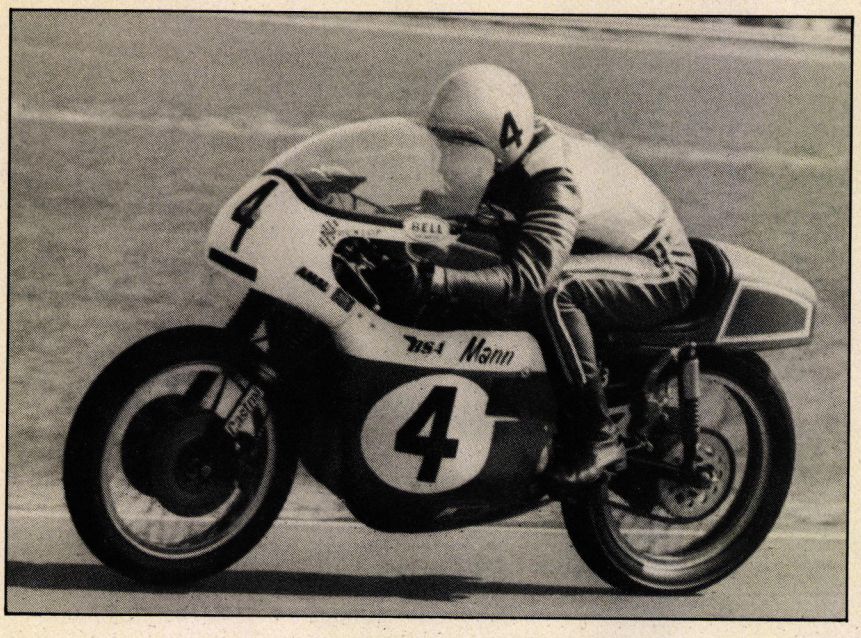
"Any problems?" I shake my head.

"Thought we should gas it up." He flips up the caps and begins sloshing in the right stuff. I nod to Dave Roper, sitting on the Armco.

"Am I doing it right, Dave? Any procedures I'm not following?"

Before he can answer, Iannucci laughs. "Yeah. You're not going *fast* enough." General chuckles around the pits. He's right, of course; this machine doesn't even work un-

Rocket Mann



• Daytona 1971 might have been this BSA's finest hour, but for its rider, Dick Mann, it was just superspeedway business as usual. "I've never considered that win my best ride on the BSA," says Mann. "It was a typical Daytona in that the best strategy was to go just fast enough to keep the leaders in sight without blowing the motor.

"Actually, my best Daytona on that bike was in 1973, the year that Saarinen won on a Yamaha. I finished fourth after a back-row start that put me way behind before I even got off pit road. But I didn't make a single mistake all day and rode a perfect race. I went around every corner leaned over as far as possible and down every straight as fast as possible. We even had a perfect gas stop. My lap times were faster than in '71 and close to those turned by the leaders, so I was about the same distance behind Saarinen when the race ended as when it started."

Although that event was Mann's best Daytona performance on the BSA, it still wasn't the bike's most significant race. He feels that the Nationals he won at Kent, Washington in June of '71 and at Pocono, Pennsylvania a month later represent the apogee of a brief but spectacular orbit by British-built triples through American roadracing. "Those tracks were tighter and more demanding than Daytona, allowing the BSA to do what it did best—race around the whole track, not just down the straights."

Mann thinks that the Pocono win in particular exemplifies the best characteristics of the BSA. His chief opponent that day, as in most of the roadraces that year, was Kel Carruthers on the 350 Yamaha two-stroke twin. "Kel's bike had better straightaway speed and held the advantage through Pocono's 115-mph sweeper. But the BSA was better in the tight turns and on bumpy pavement. And because of the cars that also raced there, Pocono had lots of ripples and bumps that were almost whoop-dee-doos. Fortunately, most of those bumps were off of the motorcycle racing line, so no one went near them all day."

In the race, Mann shadowed Carruthers all afternoon, the peaky, powerful Yamaha pulling away on the faster parts of the course, the tractable, predictable BSA reeling it back in through the infield. And it gradually became apparent to Mann that the only way he was ever going to get around Carruthers was through the whoops, MX-style. And so he did. On the very last lap, through the fifth-to-last turn, Mann stood up on the pegs and roared alongside Carruthers on the horribly bumpy inside line, the bike sliding and bouncing like a cross between a half-miler and a motocrosser. Mann edged ahead by half a bike-length coming out of that turn and, with the big triple's superior midrange power, Carruthers couldn't catch him.

"Kel was really surprised to see me on the inside. He knew that the *only* way around him was through the ripples, but he never thought I'd try to pass him there. He just couldn't believe I really did that. We rubbed fairings for 40 or 50 feet, but the BSA was better than the Yamaha out of slower turns, so he couldn't catch me. Only one of those BSAs or Triumphs could have pulled it off."

Mann is quick to point out, in fact, that it wasn't just his particular BSA that was so special, but that entire *group* of three-cylinder racers. "Those bikes instilled great confidence in all of us who rode them. They were the last roadracers that were fun to ride. You could really *race* them, all the time, anywhere on the track, even to the point of skidding them around the turns like flattrackers. Try getting a two-stroke racer to break loose like that and it'll throw you off. Two-strokes now are so explosive and demand such tremendous respect and caution that only a chosen few riders can take many chances on them."

That's a curious state of affairs, to say the least. Racing is, after all, *based* on the taking of chances, so it seems senseless to do it on machinery that tends to *penalize* you for it. It's no wonder that Dick Mann is a strong proponent of a return to the kind of racing that flourished while bikes like his very special Rocket-3 were around. —*Paul Dean*

til you punch it to eight-tenths. But my inflexible rules of racetrack testing have kept my braking points early, my throttle hand gentle. There's some urgency about it all now, though. The time is slipping away; we have plenty of sun, but the peculiar local ordinances demand that operations at Lime Rock cease precisely at six p.m. So we have less than half an hour. And I need to find out why it feels so special, so good.

This time I *blast* out of pit lane. I keep my braking point early in the Hook, but I commit the Beeza to serious lean angles and high power settings. And then I know why Dick Mann's first question to Rob Iannucci was, "Do you want to sell it?"

The fantastic howl can be dialed like a rheostat, and the road goes by obligingly quickly or slowly. More than any other racing bike I know, the BSA Rocket-3 gives me a direct, uncanny link to roadspeed. Go fast: dial it up, regardless of rpm. Go slow: chop it, and three 12:1 cylinders give you a free fourth brake to add to the wonderful 10-inch Lockheed discs. I go a little harder each lap, carefully exploring the outside of the envelope.

In the wild bumps of the Hook, my toe on the peg as high as it will go, the bike pitches and jerks. But it doesn't wiggle. No Kawasaki H2R death-wobble. I drift it out to the edge, snap it into another gear. No hesitation, no stumble. Just more world-shattering booming. And speed.

Left flick. It glides over without the heave I'd expected. The exit-drift is more pronounced here, requiring a little opposite lock. Right again, full chat, and I'm behind the bubble all the time now. Up to the hill. Let it drift out to the left, and we're airborne. No twitches, no uncertain fork topping-out. Boom. And boom again, lap after lap.

Iannucci says it's geared for Daytona, but it's reaching max rpm well before the

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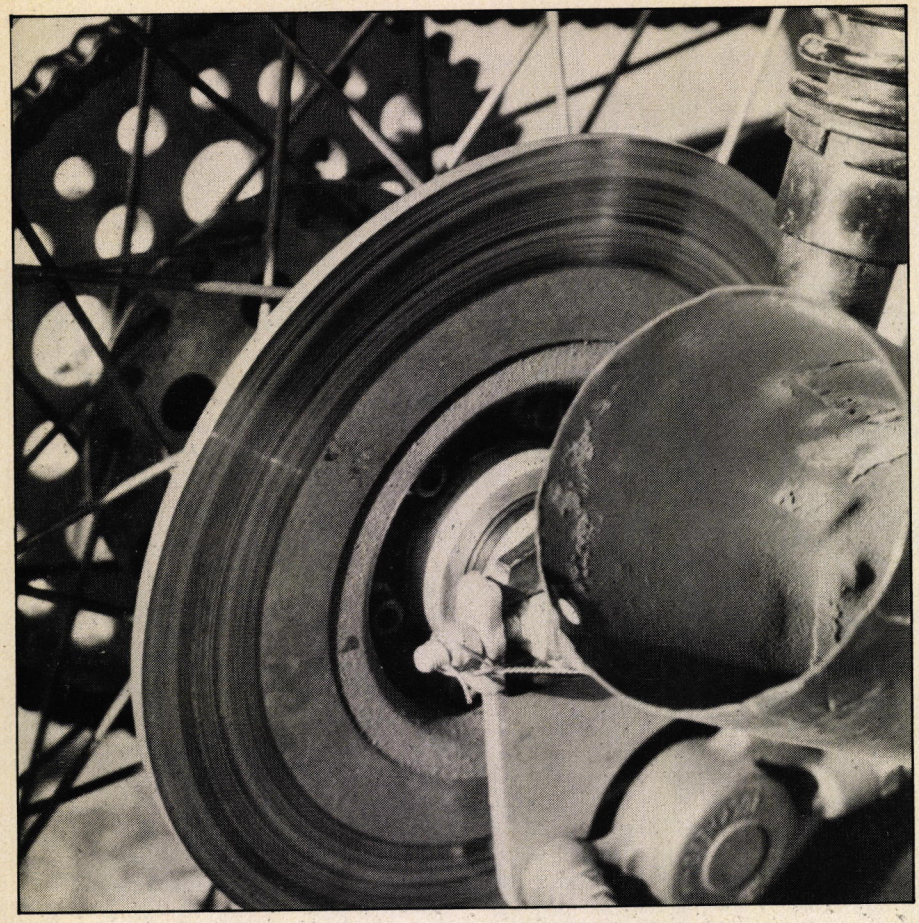


A single 10-inch Lockheed disc on the rear to match the twins up front

With the 12:1 compression, there's more brake than this racer needs.

start-finish line here at Lime Rock. The power floods in at anything over 4000 and seems to keep going well past the 8500-rpm redline. In '71, only Paul Smart's triple used Amal Concentrics—the others, including Mann's, used GP carbs—but Iannucci runs this one with three gaping Concentrics. Smart claimed they helped him slice through traffic. I can see why.

And then, too soon, the boom stops. Six o'clock. Surprised, I jump on the brakes and coast in. The chain rattles loudly in the unfamiliar silence. My ears ring. I know I should be able to jot five pages of mental notes on the bike; quirks, failures, above all, the motor. The aged, antique, scoffable, oh-so-slow motor.

But I can't. All I can do is grin like a fool. It isn't just the chemistry of a fine day, a racetrack and a racing bike, either. I enjoyed Harry Klinzmann's TZ750 at Willow Springs. Had fun with the Murray Sayle factory Kawasaki KR750 at Riverside. But the Rocket-3 is special.

I figured it out a long time later, somewhere over Kansas in the bowels of a United flight through the great dark Midwestern night. It's not a particularly profound understanding, maybe, but it helped me explain the grin and the aura of that old BSA, not to mention the fanaticism of four-stroke freaks.

It's this: Like the F750 class itself, that BSA Rocket-3 is the ultimate vision of what might be called the Old Order. The four-stroke European order, maybe even just the British order. It represents the last desperate attempt to stave off the ruthless mathematics of the dreaded two-stroke, which was eventually to topple four-strokes from the position of dominance they'd held for 80 years. Like the Battle of Britain, the Rocket-3 is the Old Order's finest hour. No wonder, then, it felt so special.

But it is also slow. Part of its attractiveness on a fine summer day at a deserted racetrack is its predictability; it does nothing too quickly. You want to know what it feels like to ride the 1971 Daytona winner? Easy: Just imagine your Honda CB750F motor with a fat torque curve and a low, stiff chassis. Boom.

Mann's greatest moment with the bike tells that story best. Pocono 1971: the Dick and Kel Show. 750cc four-stroke versus 350cc two-stroke, all day. Racing so fierce, so close, that the onlookers can only gape in astonishment. The bike you see here, says Mann, turns right better than left. So he has to work harder than usual. Finally, on the last lap, Bugs puts a classic dirt-track move on Carruthers and passes him on the inside. He takes home the gold. It is a great race, *the* classic confrontation of the Old Order and the New.

Boom. And bust.

Out there in the night over Kansas, it all suddenly looks obvious. The years of two-stroke tuners in Europe struggling to get it right, against the derision of the establishment. The MVs, Nortons, Harleys watching the Dr. Walter Kaadens with some amusement, the rulesmakers giving them "little" classes to play in. And then . . . it's not so funny anymore. The Japanese spend millions on development. The Sixties point the way for anyone who can see: When the rules aren't skewed—as the F750 rules were at first—to protect the four-strokes, they get trounced. First the Yamaha RD56 under Phil Read smokes Mike the Bike's Honda Six. Then Honda pulls out, committed to four-strokes but also dedicated to winning. The axe starts its swing as more and more race results list two-strokes as winners. Then the lull before the storm in 1971, when BSA/Triumph won everything in sight and the Norton guys took home the rest. And suddenly, it's over. The Old Order is gone, smashed, defeated by hand-grenades made reliable.

Mathematics, the BSA's epitaph should read, will always win. So if the four-strokers of the Eighties can get the numbers on their side, they'll end their exile. And Iannucci's BSA will triple in value again.

I look around the softly lit widebody and realize the parallel. Pilots and *real* plane-freaks love propeller-driven aircraft. The snarl of a Rolls-Royce Merlin sends a million volts up your spine. It, too, booms out a primeval, special sound. And it, too, succumbed to ruthless mathematics—in its case, the mathematics of turbojets.

Sitting in the womblike comfort of the DC-10, I'm glad, no matter how wonderful the recips were, for the jet. Safe, reliable, more powerful by a factor of a hundred. Not *special*, maybe, in that Merlin/BSA way, but better. Like a TZ750, which, while it may not be as spine-tingly, is just flat a better racing bike than a Rocket-3.

There's always an Old Order, and always a New. The two-strokes will fall one day. Will we then revere the TZ750? I doubt it. After all, no matter how much better than a BSA it is, there's one thing the Beeza does that a TZ doesn't, one quirky, irrational, absurd, special thing that separates, defines and ennobles the BSA.

Boom! •

PRODUCT EVALUATION:

Harro Tank Bag

Functional design for a price.

• Designer labels command a lot of money these days, producing higher prices than comparable products *sans* prestigious name. So far, the motorcycle industry is fairly low on the scale of designer craziness. Not that we're without our labels, mind you. But while we do have Vetter Mystery Ships, thus far we've been spared a Bill Blass Maxim, for instance.

We do have the Harro tank bag, though, motorcycling's answer to Geoffrey Beene neckties. This West German company designs motorcycle accessories geared toward the *upper strata;* its products are complete with manufacturer label and hefty price tag ($98.95 for the bag shown here). But let's get it straight right now that the Harro name on this bag is not just an indicator of trendiness —the product speaks for itself.

Harro's bag features two roomy compartments, a map case and a multitude of sturdy zippers the likes of which you'll never see on a pair of Jordache jeans. Indeed, if zipping is your *forte,* you'll delight at no less than four zippers on this bag. A handy, double-tab, double-direction zipper opens the expandable upper storage compartment and is hidden neatly beneath a canvas storm flap; a conventional zipper separates this compartment from the rest of the bag. A third zipper opens the lid of the lower compartment and a fourth detaches that compartment from the base of the tank bag. While this might seem like complexity for its own sake, it's this attention to detail that makes the Harro bag so convenient. It's handy to attach the base to a fuel tank, then zip-on the lower compartment for commuting—or both compartments for a weekend trip.

Pack rats will appreciate the expandable upper storage compartment made of rubber-lined canvas—it's spacious enough to store a minimum load for two people for a weekend ride and still provide room for small extras to make the trip comfortable. A map case on top of the bag is reached through this compartment—it's a little hard to get at, but it completely seals off the clear vinyl window from outside elements.

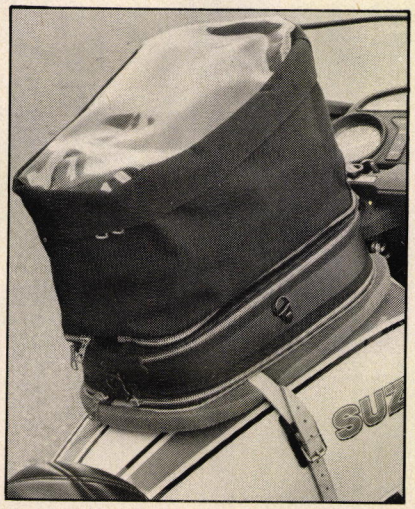
Underneath the expandable section is a compartment made of hard, stiff leather covered with thinner, weather-resistant leather. An inch-thick foam pad is provided for the bottom of this compartment, which is intended for tools. This storage cell provides enough space for most metric necessities needed on the road—enough to calm *my* paranoia, at least—with space left over for a shop rag, a can of chain lube and some tire sealant.

A foam-and-leather base protects your fuel tank from the bag and vice versa; it conforms to most mid-size or larger fuel tanks, but other models are available for smaller tanks and special models are made for BMWs. A pair of leather straps secures bag to bike, one around the tank and the other around the steering stem; both fasten with buckles that include leather patches beneath them to save your paint from scratching. Gas-cap access is simple when the steering-stem strap is loosened slightly.

To complete the package, the Harro design includes two bungie-type cords that loop over the bag and hook onto D-rings on each side of the bag. These are particularly useful for securing extra gear on top of the load (a Kryptonite lock tucks in just fine up there) or for collapsing the upper storage compartment when it's only partially full.

So the bag works well; but it still seems to beg one nagging question: Is it worth the premium price when there are other less-expensive bags that work just about as well? The answer is simple and two-fold. While there *are* other tank bags that hold gear more or less as well as the Harro, few can match the Harro's Black Forest quality, both in workmanship and materials. Second, none of the others carry the Harro label. If that is enough of a reason for you, you can get a Harro bag through the American distributor, Bavarian Cycle Works at 385 Eighth Street, San Francisco, California 94103.

—Terri M. Craig



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QUOTE-CUSTOM BIKE magazine, August 1980.

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Did it work? You know it! The new Uni-Trak machines handled better and felt pounds lighter than any other design we considered.

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The '81 K-crossers are better

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than ever, with rebuildable aluminum shocks. External damping adjusters. Adjustable gas pressure. Optional multi-rate springs for even finer suspension tuning. Fade-fighting remote reservoirs (finned aluminum on the 250 and 420). Full-floating brakes. And more.

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Kawasaki

Let the good times roll.

THE COPIES WILL BE ALONG LATER.

BETTER THAN STOCK:

Kawasaki KX420

Bodybuilding with the Jolly Green Giant.

• Perfection is a figment of every motorcyclist's imagination. What is right for one can be totally wrong for another. For just that reason, few motorcycles remain stock for long. It can be for function or fashion, but for whatever reason, we all want to make our motorcycles perfect for us. And making them perfect means making them different.

The staff at CYCLE GUIDE feels just that way about the motorcycles we test. Sometimes the styling and often the performance of a bike don't quite meet up with our idea of perfection. And just like you, we set about dialing in the changes we think will help. We might not achieve perfection, but any of these projects is declared successful if the bike ends up better than stock, which is not always the case.

The Kawasaki KX420 was a prime candidate for such a project. And it is the first of many that we will try to improve in the pages of CYCLE GUIDE. Sometimes changes will be made in the interests of fashion, but, as in the case of the Kawasaki, most of our tinkering will be done to create a better-performing motorcycle.

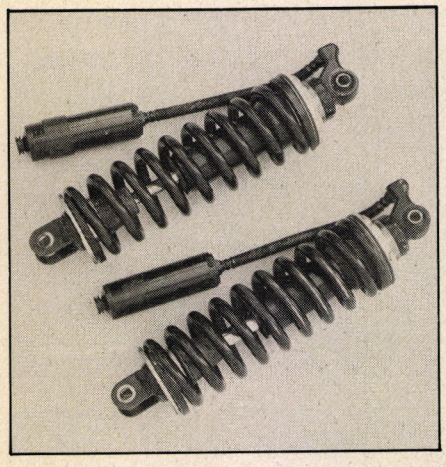
Kawasaki's KX420 seemed ripe for some tinkering because it showed such promise yet delivered so little. The new Uni-Trak suspension was potentially the most sophisticated motocross rear end that money could buy. And the 420 motor, too, held the promise of being a motocross star. Neither was the case, however, when Green Meanie and brown berms met.

Much of the KX's faults lay in the rear suspension, which was a major problem simply because it was so stiff. Both spring and damper rates seemed inordinately high, even when both were on the softest settings. It was a case of factory miscalculation that even Kawasaki's accessory spring could not completely cure.

Kawasaki dealers around the country do have one answer to the KX suspension woes, even though Kawasaki doesn't advertise it. A KX250 chassis is identical to the 420's, yet the 250 has a much lighter spring and damping rate. The 250's shock itself is completely different, but it bolts right in place on the Open-classer as if it belonged there.

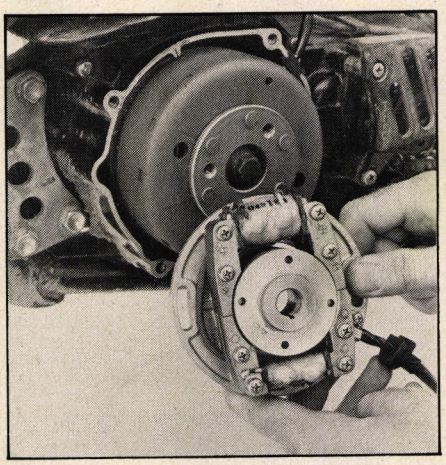
Installation poses the usual problems of having to remove the air box, but once the shock is in place everything fits perfectly. Our first settings had spring preload in the middle position, as was the rebound damping. There was still no sag when we sat on the seat, but on the track the improvement was immediately noticeable. But still not perfect; both a 165-pound and 190-pound rider wanted less spring and more damping.

With preload backed off to zero and damping set in the hardest of four positions we came as close as we were going to get to perfection. We were still some way away, but it was a considerable improvement. However, the shock change did not stop the front end pushing in turns or make us quite as relaxed as some other Open-classers do. But for the time being the suspension tinkering is stalled for lack of other aftermarket shocks for the 420.



Similar-looking shocks

Separated by a spring and damping.



Old and new ignition systems

Sometimes, bigger really is better.

There are also very few bolt-on parts for the 420 motor. And it really could do with some help. The standard motor, despite displacing 420cc, has the powerband of a 250. The horsepower graph looks more like a closeup of a darning needle, with sheer sides rising to a pointed peak at 7000 rpm.

That might be acceptable if there were plenty of peak power to use, but there is not. Hacking extra power from the electrofusion-coated barrel is not an easy solution, but broadening the power is. By adding extra flywheel weight the 420 can be ridden more easily even if it is not more powerful.

Again Kawasaki dealers are stocking one answer. If you look in their parts book, you find that a KDX400 Enduro crank is identical to a KX420's, apart from the ignition side taper. That is where the large outer rotor enduro mag sits. The KX rotor weighs a skinny 1.2 lbs, but the KDX flywheel adds a massive 200 percent more weight on top of that.

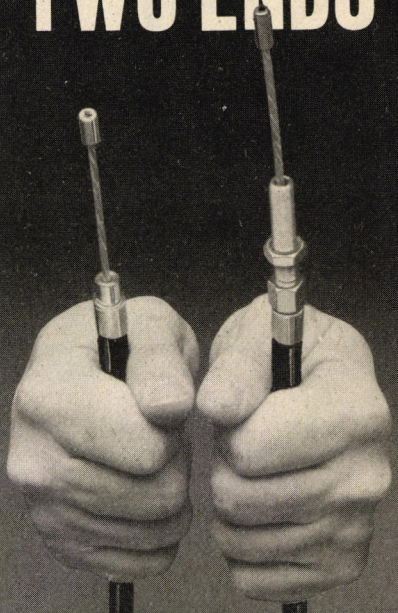
Installation obviously requires a complete motor teardown along with new seals and bearings, but the job is quite straightforward. And when the new ignition is hooked up to the enduro black box you are ready to roll.

Just like the rear suspension changes, the heavier crank makes a noticeable difference. From the first ride we liked the change, enjoying a more predictable power delivery. Power still comes on strong at high rpm, but it now comes with the surge of an Open-classer rather than the explosion of a 125. Living with the 420 motor is easier, but it still lacks the sheer horsepower numbers to blow the opposition away. So, like the suspension changes, it is a short step in the right direction.

The modifications aren't cheap—a crank and ignition cost $286.05 and a shock and spring hit you for $255.00, but they go a long way toward perfecting the KX. Not all the way, of course, since few changes ever do create perfection. But for most riders they can produce something that's better than stock.

—David Dewhurst

MORE THAN JUST TWO ENDS



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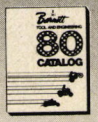

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MINITEST:

Suzuki RS175 & RS250

Listen up, all you playbikers; it's time to get serious.

• Suzuki's RS175 and RS250 could hardly miss their target; it's sure big enough. The bikes are intended to satisfy the needs of the vast majority of dirt riders, thousands of semi-serious trail folk who want more than a neophyte's trail bike but nothing quite as radical as a mile-high motocrosser.

This market is still wide-open, too, because no other manufacturer makes a machine that fits the serious playbike mold so well. Enduro bikes probably come the closest, but these days most are too high-strung and high-priced to serve as playbikes. So, up until now, backyard mechanics in search of the right mix of level-eyed funbike performance had to adapt one of the dirt-riding extremes: either port a trail bike or detune a motocrosser. Either way is an expensive means to a playbike end.

Not surprisingly, Suzuki began with its ever-popular enduro models in its search for the perfect playbike. And also no great shock, Suzuki was able to come closer to that goal than most backyard mechanics. Better still, the conversion from serious enduro bike to serious funbike was both simple and effective. And that's no polite way of reporting that Suzuki simply raided the parts bin from its other models to produce a quick-and-dirty new bike. While it's true that both the RS175 and 250 share plenty of parts with other off-road Suzukis, a careful selection of pieces insures that both bikes work as coordinated wholes rather than as collections of unrelated bits.

The motors, for instance, are essentially PE-based in both cases. The 175 comes with a virtually unaltered 1979 PE bottom end. All that is added is a little extra flywheel weight to help smooth out any sudden throttle response. And because the RS isn't a racer, the porting need not be racer-radical, either. The exhaust port is simply lowered by 1.5mm, which, combined with a 30mm carb in place of the PE's 34mm mixer, takes much of the sting out of the woods racer.

For the great majority of playbikers, such toned-down throttle response is just what's needed. Out on the open trails with no checkpoint to reach and no checkered flag to chase, the 175 provides power that is easy to handle and even easier to like. It is neither a tractor at low rpm nor a racer at the top end, and yet, for the type of riding the RS will be used for, it is more satisfying than either. In between those two extremes is a willing response that will haul you up most of the trails you'll find.

While the 175 will get you up most anything in your path, it occasionally will need a little too much clutch slip to be really fun. Then it's time to break out the 250. It, too, uses a 1979 PE as a starting point, with a 3mm lower exhaust port and a longer and more restrictive muffler.

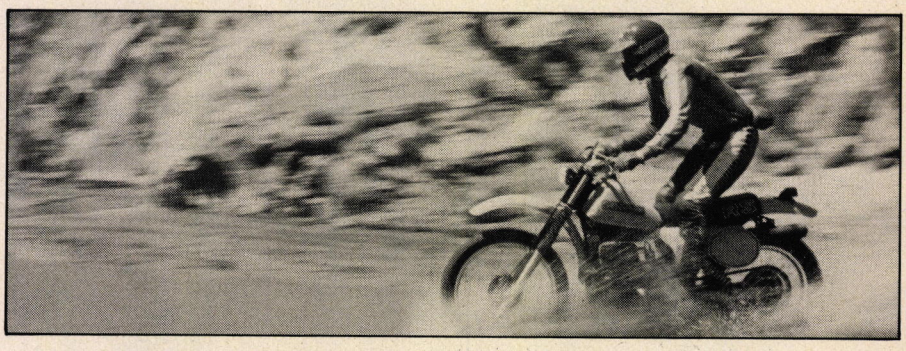
On rocky climbs, when effort is high but speeds are low, the 250 chugs along almost like a trials bike. It won't snap instantly through the powerband from that speed, but it always keeps pulling. All it takes is a quick fan of the clutch in any of the six gears and things start happening. Nothing earth-shattering, mind you, but more than enough to keep the dirt-biking masses moving briskly.

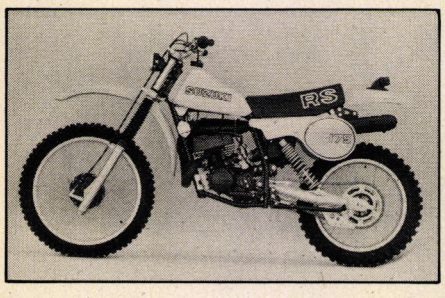
Once up to speed on either bike, there is no reason to fear that a cheap trail-bike frame will transform all that speed into a quick trip through the weeds. The RS175 was heir to one of the most successful racing frames in history: the RM125's. The same geometry that made moto wins monotonous now makes trail riding relaxing. Only the motor mounts have been changed to bring the slightly heavier left side of the motor nearer to the center line. Otherwise, the 29.5-degree head angle and 4.9 inches of trail are almost RM-spec. And that means stability on fast trails and fire roads with steering that's quick enough to make the tight woods fun, too.

The same is also true of the RS250's frame, which is largely a 1979 PE chassis. This machine also retains the light and responsive steering of a PE, but shorter suspension allows for a lower seat height than PE owners ever dreamed of.

The RS250's shorter suspension comes about through a set of non-adjustable shocks mounted slightly farther back than on the PE. To match the shorter suspension at the rear, the RS250 also has a fork with less travel than a PE's. The stanchion tube diameter is 2mm less than a PE's at 36mm, but the wall thickness of the tubing is also 1mm greater.

That is also the case with the 175, which has non-adjustable shocks bolted to a steel RM100 swingarm. But although both bikes are suspended similarly, you instantly notice a difference on the trail. Neither is motocross hard,

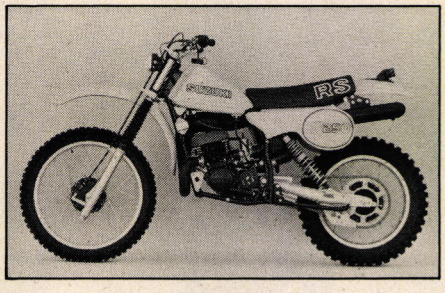




Suzuki RS175

IMPORTER: U.S. Suzuki Motor Corp.
13767 Freeway Drive
Santa Fe Springs, California 90670

Category	trail
Suggested retail price:	$1199
Engine type	two-stroke vertical single
Port arrangement	one piston-controlled intake, one reed-valve-controlled intake, six transfers, one exhaust
Bore and stroke	62.0mm x 57.0mm
Displacement	172.1cc
Carburetion	one 30mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel travel	36mm stanchion tube diameter/8.3 in. (210mm)
Rear shocks/wheel travel	10.0 in. (254mm)
Wheelbase	55.9 to 57.1 in. (1420 to 1450mm)
Seat height	35.4 in. (899mm)
Weight	219 lbs. (99kg)
Warranty	60 days
Available colors	yellow



Suzuki RS250

IMPORTER: U.S. Suzuki Motor Corp.
13767 Freeway Drive
Santa Fe Springs, California 90670

Category	trail
Suggested retail price:	$1499
Engine type	two-stroke vertical single
Port arrangement	one piston-controlled intake, one reed-valve-controlled intake, six transfers, one exhaust
Bore and stroke	67.0mm x 70.0mm
Displacement	246.8cc
Carburetion	one 36mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel travel	36mm stanchion tube diameter/9.8 in. (248mm)
Rear shocks/wheel travel	9.6 in. (243m)
Wheelbase	55.9 to 57.1 in. (1420 to 1450mm)
Seat height	36.3 in. (921mm)
Weight	238 lbs. (108kg)
Warranty	60 days
Available colors	yellow

and it is possible to bottom out both machines. The 175 is, however, much softer, and heavier riders might need an optional spring. In most cases, though, the RS suspensions will be adequate to trail-riding tasks.

Even the bare essential accessories on both RSs are all that most serious trail riders will need. The basic lighting from a DS model will get you back to camp after a day's ride—but nothing more. And the resettable tripmeter lets you know when to head back unless, like ours, it self-destructs. Our test 250 also broke its primary case, but this time a rock inflicted the destruction. The case might have been complete if Suzuki had taken a lesson from the development of the RS series and tarried at the parts bins a little longer, though. A PE sump shield would have been welcome, as would a larger PE tank—or indeed any tank with a reserve position on the petcock.

But those are essentially fixable problems on what are two very good motorcycles. With the RS series, Suzuki recognized that some dirt riders who will never touch knobby to racetrack still need performance bikes—with performance tailored to their particular needs. Suzuki not only recognized the need, it gave those grimly determined playbikers something to smile about. *—David Dewhurst*

So you want to modify your motorcycle. Wouldn't it be nice if there were a magazine written just to help you do it?

CUSTOM REPORTS: SUZUKI GS750L, KAWASAKI 650SR, YAMAHA XS ELEVEN SPECIAL & HONDA CX500 CUSTOM
Custom Rider
THE MAGAZINE OF MODIFIED MOTORCYCLES
NOVEMBER 1979
HELMETS: PAINT YOURS LIKE A PRO!
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Krazy Kits: Go-Fast Directory for Kawasaki's KZ1000 and Suzuki's GS400/425
HANDLING
At Last: The Dollar-Wise Shock Absorber Buyer's Guide
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THE MAGAZINE OF MODIFIED MOTORCYCLES
SPECIAL SECTION: FAIRINGS!
Speed Stuff for Suzuki's GS1000 and Kawasaki's KZ400
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PRODUCT EVALUATION:

Wen-Jam Designs Belt Bag

A tool carrier guaranteed to fit any bike that you *fit.*

• Motorcycle manufacturers must think that their dirt bikes will never break down while being ridden. That would explain why so many off-road motorcycles are not equipped with some means of carrying spare tools and essentials. And to make matters worse, the irregularly shaped gas tanks and rear fenders on many models make it virtually impossible to install an aftermarket tool bag.

An obvious solution to this dilemma is to mount a bag on something that's more-or-less standard in its configuration, such as the *rider* rather than the bike. And an excellent choice, should you decide to end your take-along tool woes in this manner, is the Belt Bag by Wen-Jam Designs. Not that Wen-Jam either invented rider-mounted tool bags or is the only company to make them; it's just that enough thoughtful design has gone into this firm's bags to make them stand out from most others.

An excellent example is in the way the Wen-Jam protects the rider from the cold, cruel steel of his tail-mounted toolkit. The 12-inch-wide, 4½-inch-diameter bag itself is made of rugged 1300-denier Cordura nylon that's padded internally with foam rubber and lined with a deep-pile chenille. And those extra layers are there to greatly reduce the chance of having a tool poke a hole in your back should you fall on the bag.

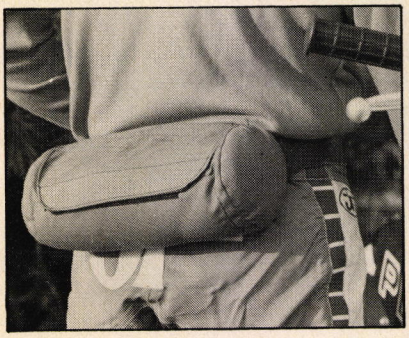
Even more rider protection is offered by the bag's heavy-duty belt. The 1¾-inch-wide leather belt fastens with a giant roller-type steel buckle for easy on/off manipulation, but more important, the belt's width increases to three inches at the rear. And that not only gives a wide attachment base for the bag, it allows the strap to function somewhat like a kidney belt. Furthermore, the belt is backed up with another piece of three-inch-wide leather inside of the bag that gives a firm anchor for the 15 bag-to-belt rivets *and* adds to the unlikelihood of the rider getting skewered with a No. 2 Phillips. Finish off the whole business with a zippered closure covered by a Velcro-secured Cordura rain flap, and you've got one rugged and safe tool bag.

There are a couple of negative aspects to the Wen-Jam design, such as the thick padding that uses up considerable room inside of the bag; but everyone on our staff agreed that they would gladly sacrifice that much carrying capacity to avoid becoming the featured ingredient in a trail-riding shish-kebob. Too, the bag isn't waterproof, but it is water-*resistant,* and that's good enough to keep your precious cargo dry—unless you fall butt-first into a deep puddle.

After almost a year of use, our Wen-Jam bag still is in perfect condition and has become our all-time favorite "bum bag." It doesn't flop around and the tools don't jangle about while you're bouncing down the trail. And once the bag has been in place for a few minutes, you forget that you're even wearing it. Best of all, it'll fit right onto any motorcycle you're likely to ride.

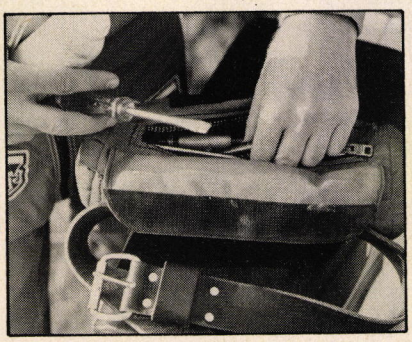
Wen-Jam doesn't sell directly to the public, but the Belt Bag can be bought for about $29.95 either through Hi-Point Accessories or the Can-Am motorcycle dealer network. There's also an all-leather model (that uses the same foam-and-pile interior padding) available for approximately $34.95 from either Malcolm Smith or Husqvarna's accessory division, Husky Products.

—*Paul Dean*



Wen-Jam in place and ready for action

Your tools are never far behind.



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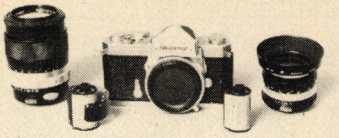

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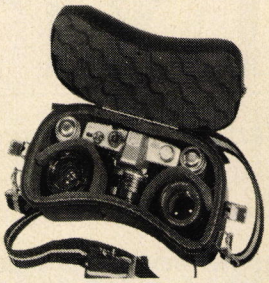

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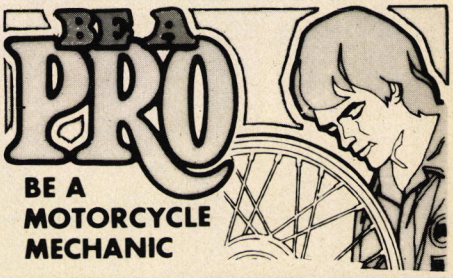

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TRAIL TEST:

Kawasaki KDX175

Suddenly, "little" means less than 175cc.

BY PAUL DEAN

• I'm about to attempt the impossible. I'm about to try to convince you that a motorcycle can be . . . well, that it can be *magic*. And I'm highly optimistic about my chances for success.

You see, the motorcycle I'm referring to is Kawasaki's KDX175 enduro. And as you are about to read, it routinely works some pretty impressive miracles in the dirt. It lets—maybe it even *makes*—beginners ride like experts and experts ride like beings from some planet where everyone is Dick Burleson. Now, if that's not magic, what is it?

Whatever it is, the KDX175 oozes it from every nook and cranny. Take my word for it. Because after 300 miles in AMA national championship enduros and nearly 500 additional miles of WFO test riding on two of them, *I know*. I've tried my damndest to break them, to fall off of them and to make a fool of myself on them, but so far I haven't had much success. Matter of fact, these 175cc Uni-Traks are so good that people around here think that I actually know what I'm doing on an enduro bike. In that respect, riding a KDX175 has done more for my image than a personal press agent.

You might have read high praise for this motorcycle before, probably in tests of the original model earlier in the year. If so, you might be surprised to learn that the '81 version is even better. Not so you'd notice at first glance, yet Kawasaki apparently found a way to dip the new KDX into that special magic potion one more time, for it is, without question, a slightly better motorcycle in virtually every way.

Take the engine, for example, a 173cc reed-valve two-stroke that's been conspicuously improved with just a few inconspicuous refinements. Like the window that's now machined into the intake skirt of the piston, extending the effective open duration of the intake port and the booster transfer port without requiring any change in their actual dimensions. Translation: better performance from the middle of the rpm range upward. Additionally, the fat center section of the exhaust pipe has been enlarged in diameter to increase its interior volume. That also nets more power in the top half of the rpm scale. And although the compression ratio remains unchanged at 7.6:1, the squish band in the cylinder head is reshaped to improve combustion characteristics at *all* rpm.

What this means out on the trail is that anyone who liked last year's engine will absolutely *love* this year's. Not that the original motor drew much criticism; most people were amazed at how much power the "little" 175 produced at any and all rpm. It was just short of a trials motor at very low revs, typically enduro-torquey in the midrange and right in Motocross City on the top end. Yet Kawasaki claims the '81 engine has three *more* peak horsepower; and the fact that the new peak is at 9000 rpm, 500 revs lower than last year, is your first clue that the rest of the rpm range hasn't suffered because of that increase. The truth is, there's a noticeable improvement in responsiveness at medium rpm and slightly more crisp running at low revs.

I learned first-hand about the wonderfulness of those improvements when, after having logged hundreds of miles aboard a 1980 KDX175, I debuted an '81 in the Jack Pine National enduro. Time after time in that demanding 200-mile event, the powerful-but-tractable engine pulled me out of potential trouble when I made a riding mistake. Sometimes it lugged down to ridiculously low rpm like a good 250 when brain-fade made me use the wrong gear on a steep uphill; other times it continued to pull effectively at what sounded like nine million rpm when my flailing feet couldn't even find the footpegs, let alone the gearshift. No matter how unreasonable my request, the engine was willing to comply. Sure, the 1980 KDX had been exceptionally forgiving, power-wise, but the new engine has two-stroke compassion down to a fine art.

Don't, however, credit all of that to improvements inside of the engine; some minor changes in exterior systems, such as the carburetor jetting and the air filter, have done their part to boost the get-up-and-go. The filter's cake-shaped foam element now offers more usable filtering area, even though it's more squat than before. The shortness keeps the circular part of the element from pressing against the inside of the left sidepanel, thus adding that

area to the available filtering surface. And while the increase might not be discernible when the foam is clean and freshly oiled, the added breathing is readily apparent in the way the engine continues to pump out good high-rpm power when the element is wearing 100 miles of enduro grunge.

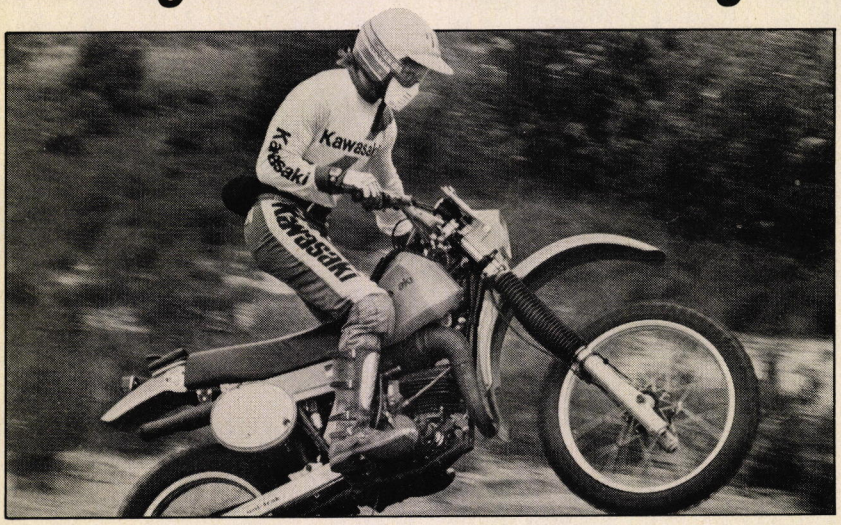
That broadened power curve also has effectively remedied one more flaw in the '80-model KDX: a sizable ratio gap between second and third gears. Last year's engine sometimes had trouble spanning that gap in heavy mud or up certain hills; but the wider powerband on the '81 usually handles it with ease, even though all of the ratios are identical to last year's. And if you *do* reach a point where one gear is a bit too low and the other a tad too high, you generally can urge the KDX up into a stronger segment of its powerband by slipping the clutch—in the taller of the two gears, of course—to gather speed. The most amazing thing is that the clutch accepts mile after mile of that kind of abuse without a whimper. I deliberately (and needlessly) used that tactic on just about every one of the many uphills in the Oregon National aboard a 1980 KDX, but the clutch adjustment didn't fluctuate even one millimeter all day.

Indeed, that 125-mile enduro was one I'll never forget, although for reasons having nothing to do with clutch free play. For one thing, while several hundred of us were following little red arrows through the Oregon woods, Mt. St. Helens was blowing her stack for the first time just right down the road. Nothing like a volcanic eruption to commemorate your first enduro in more than eight years. But as awesome as that spectacle was, the KDX175 showed me something almost as impressive that day. It showed me that all of this business about 175s being too small for big people to ride competitively is pure bull. By mid-event I had lost over 40 minutes in two massive bottlenecks, and yet—at six-foot-one and over 200 pounds at the time—I was able to get back on schedule and zero the last three checks. Not because I'm one of those Burleson-clone riders. Not because I cheated or cut the course. But because the motorcycle I rode that day was, as I said before, *magic*.

I hear some scoffing and snickering out there. Meaning that, obviously, you've never ridden a KDX175. If you had, you'd know what I'm talking about. You'd know that this innocuous-looking little Kawasaki is one of the finest-handling and most-forgiving enduro bikes ever to leave its knobprint in the woods. So much so that you or I or virtually anyone can get seriously and outrageously *berserk* on one

Continued

Getting With The Penton Program



• When Jack Penton formed True Sport Engineering at the beginning of 1980, he had one immediate objective: to surround himself with some of the best enduro riders and mechanics in the business. The reason was that Kawasaki had retained his services to field and ride on a team for national enduro and ISDT competition. And Kawasaki's mandate to Penton was clear: prove that the company's enduro bikes were winners, even if they needed large-scale modification.

Penton's first experience with a KDX175 indicated that his job wasn't going to be difficult at all, not as far as *that* motorcycle was concerned. "When we first started with the stock 175, we were impressed," claims Penton. "It didn't appear that we would have to do any extensive modifications at all to make it at least as competitive as any other enduro bike. Our initial impressions proved accurate, too, for the KDX didn't need much fiddling to be a national-caliber competitor."

Basically, what Penton and his crew do with the KDX is replace a few standard parts with better-made—and more expensive—units. This motorcycle, like any other, is manufactured under the watchful eye of corporate bean-counters, and all that Penton does is to put the competitive edge back in that the cost-per-thousand guys took *out*. For instance, True Sport mounts state-of-the-art knobbies at both ends, usually a 3.00x21 4-ply Hi-Point tire up front and either a Hi-Point 110/90 or a Metzeler 4.00x18 in the rear. TDI sprockets that retain the standard gear ratio are used, and the stock brake shoes are kept, but replaced with every two or three nationals.

Cosmetically, True Sport installs KX125 motocross-style side number plates on its KDXs "just to make 'em look trick." And a Hi-Point front fender is bolted in place due to the stocker's tendency to bend and flap when heavily mud-laden. A straight-pull throttle and Six-Day-type levers, all by Magura, are installed and hooked to Terrycables. And either the standard handlebar is cut down to about a 30-inch width or a Hi-Point bar is used by the Big Green Enduro Team.

You would think that Penton's KDX175 engines would be terribly trick. But they're not. "We tried a lot of different porting specs and liners and carburetors and pistons and rings," said Penton about his quest for an improved powerplant. "But after all the research and modifications, we came back to stone-stock. It works the best."

The engine didn't *completely* escape the True Sport touch, however. To facilitate easier on-the-trail engine repairs, all of the Phillips-head case screws were replaced with straight-slot screws from Metric Multi Standards of New York. An in-line fuel filter and a Hi-Point air filter were installed, and the skid plate was discarded because mud tended to accumulate inside of it. The cure for an exhaust-system leak that often crops up on KDX175s was found to be either the replacement of the pipe's rubber gasket every few races or else modifying the header pipe to accept *two* gaskets. And True Sport's final touch is to mount enduro timekeeping equipment from Clairemont Cycle Supply.

Other than those few modifications, Team Kawasaki's KDX175s—including Jack Penton's own bike—are frighteningly close to stock. So if you want to zero all of the checkpoints just the way that he does, get a pair of size 32 Hi-Point Kawasaki pants, size 9 boots and size 9 gloves (Jack's father, John Penton, owns Hi-Point Accessories, if you hadn't already guessed), a white Kawasaki jersey and a green 7⅛ Bell Moto III. Then curl your hair and grow a moustache, and you'll be just like Jack Penton—except for the talent, the stamina, the experience and most of all, the blazing speed.

—Brad Zimmerman

and live to brag about it. And *that's* why I was able to make up so much time in Oregon. In fact, the worst thing about my maniacal ride on the KDX that day was that I couldn't stand at the side of the trail and admire myself while I was getting away with such uncharacteristic craziness. Like I said, it's a magical motorcycle.

There are, of course, numerous reasons why. One is that the KDX has an unusually long wheelbase that helps give it the straight-line stability of a Greyhound Scenicruiser. That's mostly because the rear ends of long motorcycles tend to do things slowly—things such as skitter and sidehop. Better yet, the KDX does them not at all. Furthermore, the bike is comparatively front-heavy; and while that, in conjunction with the long wheelbase, makes wheelies more difficult, it also discourages the front wheel from being easily deflected off-course.

Not that the KDX *can't* react in a hurry; it most assuredly can, for the steering geometry is very quick and the center of gravity—due, in part, to the physics of the Uni-Trak rear suspension—is relatively low. So although the KDX is stubbornly prone to going in a straight line when acted upon by outside forces, it *will* change direction immediately when ordered by the rider.

I experienced the bike's entire range of handling versatility in the Jack Pine, where one minute the drill was to zig-zag between closely spaced trees in low gear, and the next it was sandy whoop-dee-doos at the top of fourth and fifth gear. These examples represent the extremes of the enduro-handling spectrum, yet the KDX dealt with both conditions exceptionally well. When the situation called for full-lock steering, the bike seemed as though it had been specifically designed for it. But it also felt ideally suited for high-speed rough-riding, for it absolutely *refused* to get sideways or out of shape on the cobbiest and fastest of trails.

Not to be overlooked, though, is the contribution the suspension makes to the KDX's good trail manners. Basically, things in the leading-axle fork and unreservoired-shock department are almost the same as last year, but there are some improvements. The fork, for instance, is now fitted with air caps, and while everything else about it is unchanged, the air-assist allows a greater range of tunability to suit various riding conditions and styles. The Uni-Trak shock, too, offers the same rates of springing and non-adjustable damping as the original KDX175, but there's a new shock body and single-rate spring that are lighter in weight. Lighter and stronger also

Charting the Changes

Engine: Addition of intake/transfer window in intake skirt of piston. Larger-diameter center section in exhaust pipe. Reshaped combustion-chamber squish band, but retaining 7.6:1 compression ratio. Lower-profile foam air filter element that increases usable filtering surface by not contacting airbox cover. Small carburetor jetting changes. Shift lever redesigned for more clearance beneath drive chain. Claimed increase of 5 bhp at 9000 rpm instead of 9500 rpm; claimed increase of 1.4 lb/ft in peak torque, but at same rpm as 1980-model, 8000.

Drivetrain: DID drive chain instead of Tsubaki. Improved chain-tensioner roller wheels. Addition of plastic chain guard on swingarm.

Suspension: Addition of air caps on front fork. Lighter-weight Uni-Trak spring and shock body, same spring and damping rates as 1980-model. Lighter, stronger swingarm-to-shock-rocker torque links. One-piece caps over Heim joints on torque links.

Brakes: no change

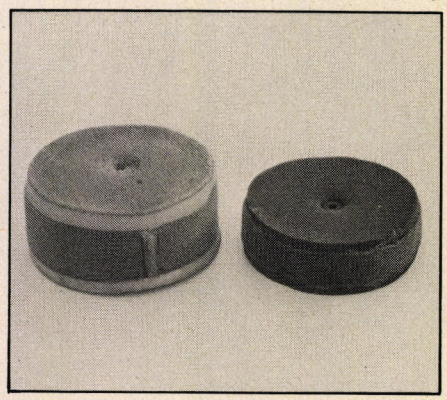
Tires: no change

Dimensions and capacities: no change

Details: Wider and longer rear fender with molded-on taillight mount. Rear frame loop extended to make room for addition of tool bag behind seat. Stronger height-stop tab on rear brake pedal. Wider skid-plate, but still plastic. Improved adhesive on gas-tank decals.

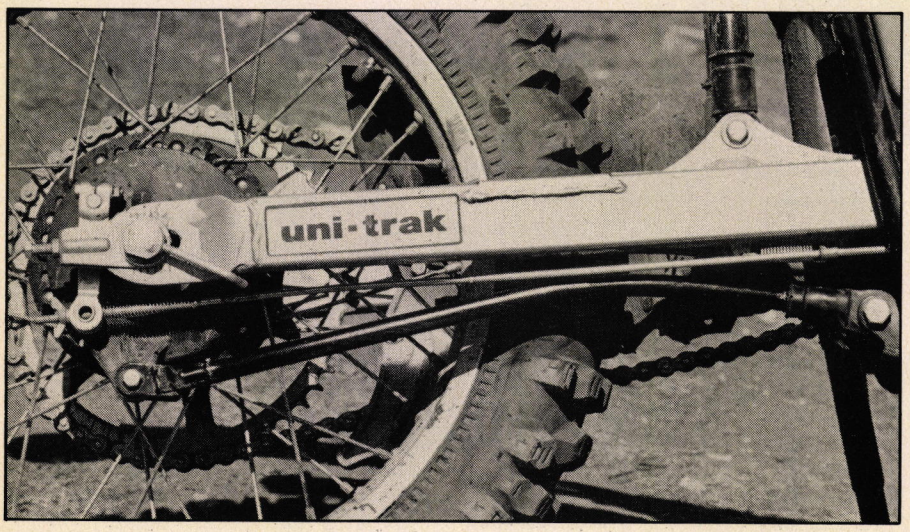
Gucci-styled vinyl tool bag

Not rugged, but at least it's there.



New KDX's downsized foam filter element

In this case, smaller really is better.



Rear-brake torque arm wounded in combat

The brake is fully floating, but the arm can be bent while climbing obstacles.

is Kawasaki's description of the bike's improved "torque arms," as they're called, the vertical struts that connect the steel swingarm to the beefy rocker arm beneath the seat.

Despite the improvements, I was able to bottom the rear end of both bikes on some of the more horrendous whoops and bumps, even after I had starved myself down to 185 pounds. That bottoming was for a reason, though, since the rear spring rate was selected to accomodate average-size 175-class riders—those between about 125 and 165 pounds would be my guess. Otherwise, the rear ends on both bikes behaved impeccably on all types of terrain, ranging from the stutter of little chops to the slam of giant moguls. My sole displeasure with the 1980 front suspension, too, was its tendency to bottom on occasion; but pumping about four to eight psi of air into the '81-model's tubes left me with nothing to snivel about, fork-wise.

The resultant ride, therefore, is plush, but I *do* have one complaint about the bike's overall comfort: The distance between the handgrips and the footpegs is too short. That's easy to understand, since the KDX175 is, essentially, an overbored KX125 motocrosser. Today's motocross machines have very short gas tanks and extreme forward riding positions to keep the rider's weight on the front wheel for better steering; and that situation is further complicated on 125cc MXers by the fact that the average rider in that class is quite small. And so my long-limbed body is never completely at ease when it's up on the pegs, especially when going up steep hills. I have to devote a lot of energy to just hanging on that would be better used to steer the motorcycle. If you're five-foot-eight or less, though, forget everything I just said.

Truthfully, the stand-up position is my biggest gripe about the new KDX175. Oh, I could whine about how the long torque arm on the full-floating rear brake is vulnerable to damage or that the brake itself is a bit too touchy. I could point out that the brake pedal ought to have a folding tip like the gearshift's. And if I wanted to pick a few ISDT-caliber nits, I could note that the KDX's wheels aren't exactly of the quick-change variety. But when I weigh the importance of these few items against the utter competence of the bike's overall performance profile, I haven't got the nerve to *really* complain about them.

Besides, it's not as though Kawasaki hasn't made an honest attempt to improve the KDX. To help extend chain life, for instance, there's now a plastic chainguard on the swingarm to keep the knobs from

slinging dirt on the No. 520 DID. And to prevent the shift lever from being sawed in two when the chain does develop excess slack, the lever has been reshaped for more clearance where it passes under the chain. There's also a wider plastic skidplate, a longer and wider rear fender, and even a toolbag behind the seat—not a particularly *good* bag, but better than no bag at all. And Kawasaki even found a way to keep the stickers from peeling off of the plastic gas tank.

If those improvements seem trifling to you, if things like windows in pistons and shorter filter elements and stickers that stay stuck leave you with the impression that the 1981 KDX175 isn't much better than the 1980 model, you're right; it isn't. But that's not a put-down of the new bike; it's a tribute to the intelligent design of the original. Which proves that if it's done right in the first place, it's hard to improve the second time around.

Make no mistake, then: Kawasaki did it right the first time. That's why the KDX was and is magic. That's why in more than 450 consecutive miles on them, including both National enduros, I didn't fall down once. And believe me, I do fall down. A *lot*, at times. But aside from when I laid the bike on its side once to help another rider, the handgrips never touched the ground. And with me riding, *that's* magic.

In all fairness, I have to admit that "magic" almost is a cop-out in this case, a word that describes what the bike does, not what it *is*. But there's another single-word description that tells you everything you need to know about this motorcycle. When you consider all of the things the KDX175 can do, how well it does them and the incredibly wide range of riders for whom it can do them, when you take into account all of the offbike factors such as price and reliability and the like, the picture—in my mind, at least—is crystal-clear: The KDX175 is the *best* all-around enduro motorcycle built. And not just at the present time.

Ever. •

Ride Review

• Little bikes are for kids as far as I can see. And anything less than a quarter-liter is usually less than enough for me. Normally, I wouldn't even seriously consider a 175 big enough for my 190-pound frame, so imagine my surprise at liking the KDX. From the first day in the workshop when I threw a leg over the tall saddle I felt at home. The bike was light and manageable, but somehow it didn't feel at all like a kids' machine. The first ride was just as impressive. This was not kids' stuff but an adult toy that dragged me everywhere I wanted to go. From the steepest hill to the tightest trail I enjoyed a second childhood.

So much pleasure could not come from a single source. Neither the frame nor the motor alone would have been enough to convince a grownup like me that 175s are not solely for kids. The KDX convinced me with a perfectly balanced package. The engine pulls like no 175 I have ever ridden, and the clutch will absorb just about any abuse. Better still, the suspension will not pass along any abuse to the rider. It doesn't even give cause for concern, because at any speed the KDX is stable. Even in the woods it is manageable.

After a few days of hard riding I am prepared to admit that there is some measure of the child in each of us. And the bit inside me wants a KDX175. —*David Dewhurst*

• It's easy for me to be contemptuous of 175cc enduro bikes. I know they offer a combination of light weight and full-size power that should make them the right choice for 90 percent of all enduro riders. But as much as I acknowledge the wisdom of the concept, the execution always has bothered me.

Basically, I get tired of keeping track of a scaled-up 125 motocrosser on the trail. Every chipmunk dropping deflects the front wheel, so I'm weaving through the woods when it's not necessary. And the powerband is so narrow that the shifting required for a 50-mile loop leaves me bleeding from the ears.

So my appreciation for the KDX175 doesn't rest on its resemblance to other 175s. Instead, I'd choose this bike because it deals with rugged terrain with the same unflappable cool as a Husky 250WR. It's got a full-size chassis that lets me ride the shortest distance between two checkpoints. Meanwhile, the engine spins out that perfect combination of low-end thrust and top-end horsepower that Yamaha has sought without success for three years.

Sure, I realize that the KDX is a great 175cc enduro bike. It even says 175 right on the sidecovers. But in its heart, this bike knows it's a 250. And when you come right down to it, I do, too. —*Michael Jordan*

Continued

Kawasaki KDX175

SPECIFICATIONS:

Distributor: Kawasaki Motor Corp., USA
2009 East Edinger Avenue
Santa Ana, California 92711

CATEGORY: enduro

SUGGESTED RETAIL PRICE: N.A.

ENGINE

Type ..... two-stroke vertical single
Port arrangement ..... one reed-valve-controlled intake, four transfers, one booster transfer, one exhaust
Bore and stroke ..... 66.0mm x 50.6mm
Displacement 173.1cc
Compression ratio (corrected) 7.6:1
Carburetion ..... one 34mm Mikuni slide/needle
Air filter ..... washable oiled foam
Lubrication ..... pre-mixed
Starting system ..... primary kick
Ignition ..... flywheel-magneto CDI
Charging system ..... none; direct AC lighting

DRIVETRAIN

Primary drive ..... straight-cut gears; 3.000:1 ratio
Clutch ..... wet, multi-plate
Final drive ..... #520 chain (⅝-in. pitch, ¼-in. width); 4.33:1 (12/52) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.69	34.97	2.2
II	1.69	21.92	3.5
III	1.29	16.70	4.6
IV	1.04	13.53	5.7
V	0.87	11.30	6.8
VI	0.75	9.75	7.9

SUSPENSION/WHEEL TRAVEL

Front air/spring ..... 36mm stanchion tube diameter/9.6 in. (244mm)
Rear ..... Uni-Track single shock, 16mm preload adj. range/9.8 in. (249mm)

BRAKES

Front ..... drum, single-leading shoe
Rear ..... drum, single-leading shoe, rod-operated

TIRES

Front ..... 3.00x21 Bridgestone Motocross M17
Rear ..... 4.00x18 Bridgestone Motocross M20

DIMENSIONS AND CAPACITIES

Weight ..... 222 lbs. (101kg)
Weight distribution ..... 46.4% front, 53.6% rear
Wheelbase ..... 57.6 to 58.8 in. (1463 to 1494mm)
Seat height ..... 36.8 in. (935mm)
Handlebar width ..... 32.5 in. (826mm)
Footpeg height ..... 15.6 in. (396mm)
Ground clearance ..... 10.2 in. (259mm), at
Steering head angle ..... 28.0 degrees from vertical
Front wheel trail ..... 4.72 in. (120mm)
Frame ..... tubular mild steel, single front downtube
Fuel tank ..... plastic, 3.1 gal. (11.8/), no reserve
Instrumentation ..... odometer, tripmeter resettable in tenths

PERFORMANCE

Top speed (calculated) ..... 75 mph (121 kph)

WARRANTY: 90 days

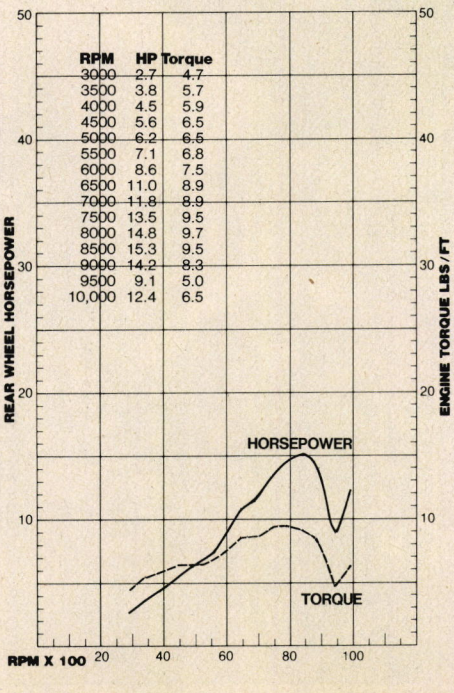
AVAILABLE COLORS: green

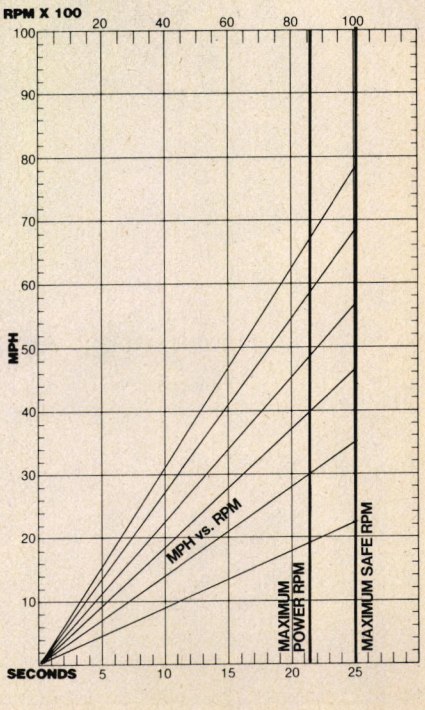
All weights and measurements are taken with machine unladen and fuel tank empty.

COMPARATIVE TEST DATA:

Make & Model	Horsepower	Wheel Travel Front/Rear, in.	Weight (fuel tank empty), lb.	Weight bias Front/Rear percent	Transmission, number of speeds
Kawasaki KDX175	15.3	9.6/9.8	222	46.4/53.6	6
SWM 175 ISDT	17.3	10.0/10.0	220	44.1/55.9	6
Yamaha IT175G	NA	9.2/8.5	211	NA	6
Suzuki PE175C	11.2	8.8/9.4	216	45.8/54.2	6
Husqvarna 250WR	21.9	9.5/9.5	238	44.1/55.9	6
Honda XR200	NA	8.0/7.8	219	43.5/56.5	6

PERFORMANCE:





AND NOW, A WORD ABOUT WHY YOU SHOULD BE READING CYCLE GUIDE EVERY MONTH:

mō'tor•cy'cles

We don't expect you to buy our magazine because it has tips on gourmet dining. Nor because it tells you what the latest in jogging shoes is. We expect you to like CYCLE GUIDE because it's the best-written, most thorough, most entertaining dose of high-intensity moto-info you can buy. A kind of monthly one-stop shopping center for all your motorcycle input, from new-model tests to inside tips, secrets of the sport, new ways to have fun with your bike and evaluations of the accessories made to help you have that fun.

Street & Dirt

Naturally, we don't confine our interest to one kind of motorcycling. For instance, we think there's nothing in all the world more fun than doing cross-ups with the spectacular MX machinery available today. Not to mention dodging trees and rocks in enduros. In fact, if it's something you can do with a motorcycle off-road, we're sure to do it.

Which doesn't mean, of course, that we don't work the other side of the trees. Whenever we can, we turn our lively and exhaustive street tests into staff rides, blitzing the twisties and eating up thousands of miles in touring. Because we love street motorcycles as much as dirt bikes.

Just like you.

Big & Small

Some people seem to think you can't have fun on anything that doesn't have a handful of cylinders and eyeball-squashing power. And some people think that God meant Man only to ride bikes with seven-speed gearboxes and a teacup-full of engine. We're not like either group. We can have fun testing and writing about anything with two wheels and a motor, from crypto-chopper to minibike. So our entire staff is totally conversant with the whole motorcycle spectrum, from tiddler to terror. And consequently, whatever your preferences in displacement and power, you'll find them within the pages of CYCLE GUIDE.

Because fun isn't measured in cubic inches.

Riding & Writing

Ours is a staff of expert riders. Qualified to ride or race almost anything. But it's not our ability to turn hot laps that makes us proud of our work. It's our ability to turn hot licks on the typewriter.

That's because while there are a lot of good riders around, there aren't many who can turn the experience of riding into something others can share and delight in. Or learn from. So we've been very selective about who writes for us, making sure that riding skill is matched by writing skill. The result isn't Shakespeare, but we think our ways of taking you along with us over the jumps, across the apexes and through the woods on two wheels are better than anyone's in the business.

Including Shakespeare.

Them & Us

There are a lot of motorcycle magazines on your newsstand. Some specialize in dirt bikes, some in street bikes, others in choppers. Some are very nice to flip through in idle moments. And like you, because we're full-on motorcyclists, we flip through them too, occasionally even finding something we like to read. But like you, we think there's a world of difference between an "occasional" magazine and one that delivers the kind of excitement, enjoyment and insight we'd feel good about spending our money on.

The occasional magazines are still in the rack. You're holding the one that we know delivers the goods every month.

CYCLE GUIDE

HARD RIDERS WITH THE RIGHT LINES.

RIDING IMPRESSION:

Krauser MKM1000

Flat-out autobahn cruiser with a hi-tech frame.

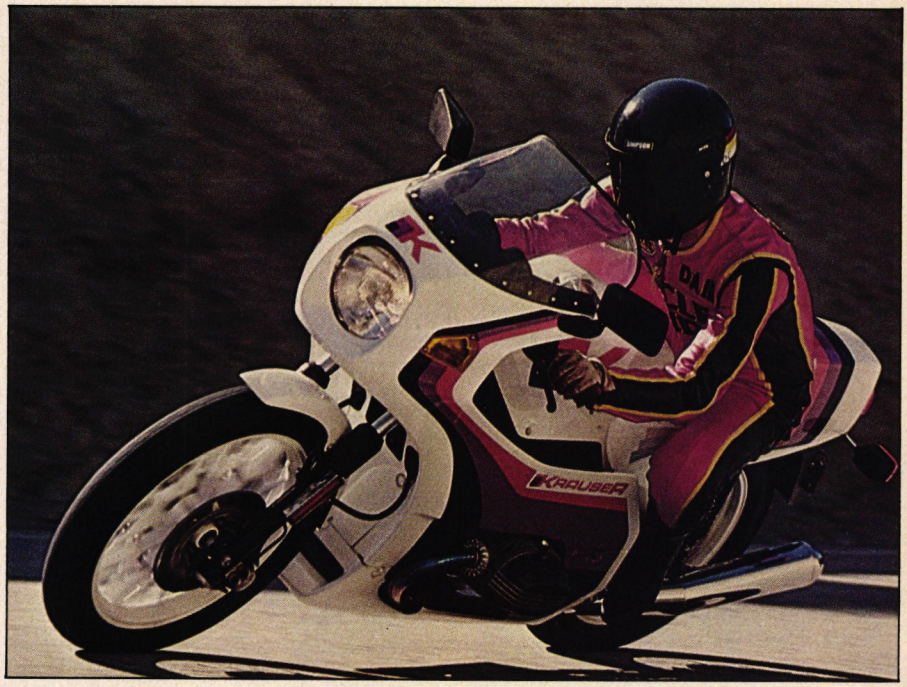
• In Germany, motorcycles are meant to be ridden at top speed. You have no choice. The country is laced with high-speed thoroughfares called autobahns that are far twistier than American turnpikes. The speed limit is not 55 mph. The left-hand lane is restricted to high-speed cruising. Unless you keep a reasonable pace, you're apt to be squashed like a cockroach by Porsche 928s, BMW 645s or Mercedes-Benz 450SLCs hurtling along at 200 kph.

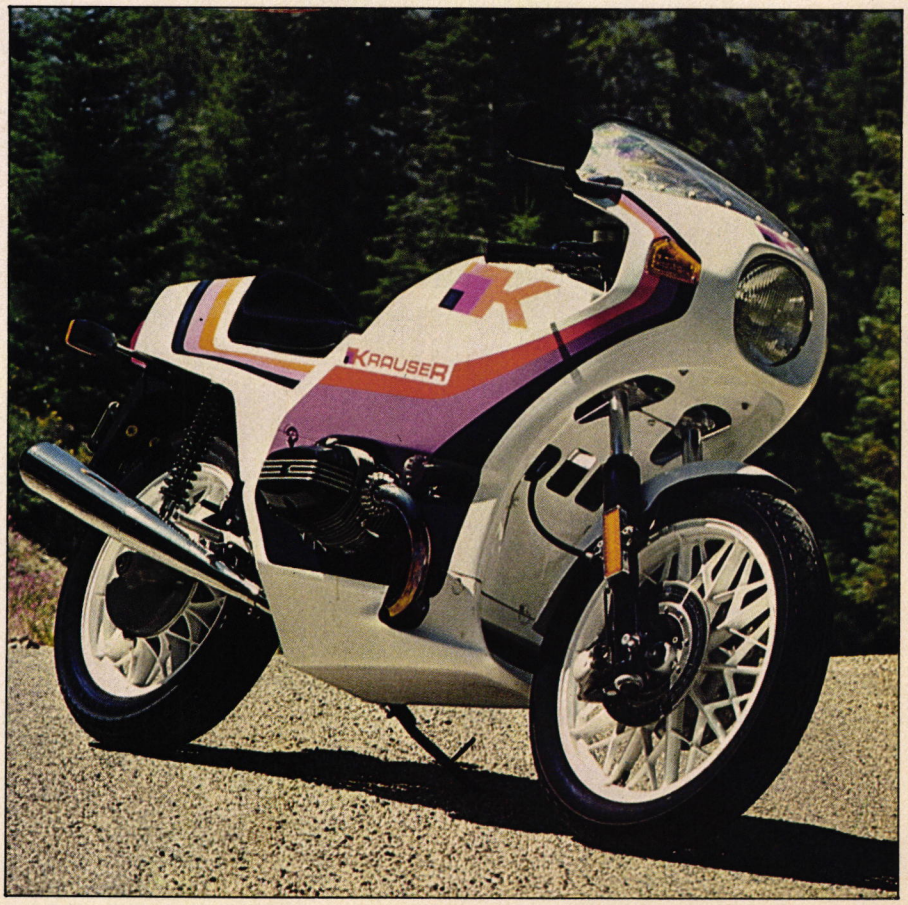
It is the leather-suited weekend motorcyclist who craves this sort of riding who will most appreciate the Krauser MKM1000. Once you tuck behind the Whirlpool-white fairing at 90 mph, the only evidence of the hole the bike punches in the wind is a slight rustle around your ears. With your arms stretched to meet the narrow handlebar, your feet resting on hand-fabricated rearsets and your backside braced against the tailpiece, the MKM carves single-mindedly through high-speed sweepers like a racer, the BMW S-type engine throbbling like an oversize metronome. The Krauser MKM1000 is one of the best bikes for flat-out running ever built.

Motorcycle luggage and accessory manufacturer Mike Krauser had such Sunday adventures in mind when he commissioned the MKM1000 (Mike Krauser Motorcycle) for production. Krauser has sponsored racing sidecars in the past, provided some backing for Freddie Spencer's European adventures this year and bankrolled Toni Mang's successful pursuit of the 1980 250cc roadracing world championship, but he has long sought to stamp street riding with his own personal imprint. With this BMW-powered special, Krauser hopes to embody his vision of what a true high-performance road bike should be.

The MKM has its genesis in a development firm called HPN, composed of former endurance racer Alfred Halbfeld, a silent partner named Pepperl and Michael Neher. In April 1979, the firm began development of a BMW-powered special because, as Neher comments, only BMW owners can afford such bikes. Furthermore, HPN elected to certify the bike as a production motorcycle with the TUV, the hard-nose German counterpart of the DOT and EPA. After $22,000 of certification and a further $115,000 of development, HPN convinced Krauser to fund a 200-unit production run.

Virtually all of the MKM's running gear comes from BMW parts bins—a move to satisfy the TUV—which insures that the MKM is a high-performance street bike instead of a streetable racer like the Bimota, Motoplast or Behn specials. The S-type BMW engine with its hot cam, 8.2:1 compression ratio and 40mm Bing CV carbs is fitted, and the wheels, ex-





PHOTOGRAPHY © 1980 CHRIS EASTMAN

haust pipes, brakes and shaft drive also come from the 1980 R100S (now called the R100CS). The S-model's suspension pieces have been modified to provide less travel for greater high-speed stability, however. Stiffer preload springs do the job in front while stiff springs and heavier 10-weight shock oil do the job in the rear. This production-based hardware attests to the MKM's expected durability and also explains why the bike qualifies as a street-legal bike in the U.S.

The linchpin of the Krauser-bike, though, is its frame. As with many of the specialty bikes these days, the frame has its roots in pre-Honda RCB endurance racing, when engine technology was closely controlled and speed had to come from chassis engineering. The MKM uses a space frame, a design offering plenty of that elusive but valuable quantity, torsional rigidity, for good high-speed handling while minimizing weight. HPN also used computer modeling to develop a space frame that uses many short lengths of small-diameter tubing. This *Gitterrohrfarhwerk* or birdcage-like design permits an extremely lightweight structure—25.3 pounds—that still offers substantial torsional rigidity.

Surrounding the MKM's frame is a fiberglass body drawn by Franz Wiedemann, who learned his trade designing BMW's R100RS and R100RT fairings in the Pininfarina windtunnel. The fairing and the one-piece tank/seat/tailpiece attach to the frame with Dzus-type fasteners. The 5.6-gallon aluminum fuel tank (with a miniscule reserve capacity) lies beneath the fiberglass, nestled among the frame tubes. The simple slab of foam that forms the seat can be removed to reveal a storage area in the tailpiece. A different body with a passenger seat also can be ordered for the MKM if you prefer.

Once you fit yourself into the monoposto riding position and get underway, the feedback the MKM gives you is pure BMW. Yet the Krauser bike manages to refine these sensations, reducing the amplitude of engine vibrations and controlling the rise and fall of the rear end. As a result, the MKM operates with greater precision than any BMW, including the way the rearset shift lever snaps through clunk-free gearchanges.

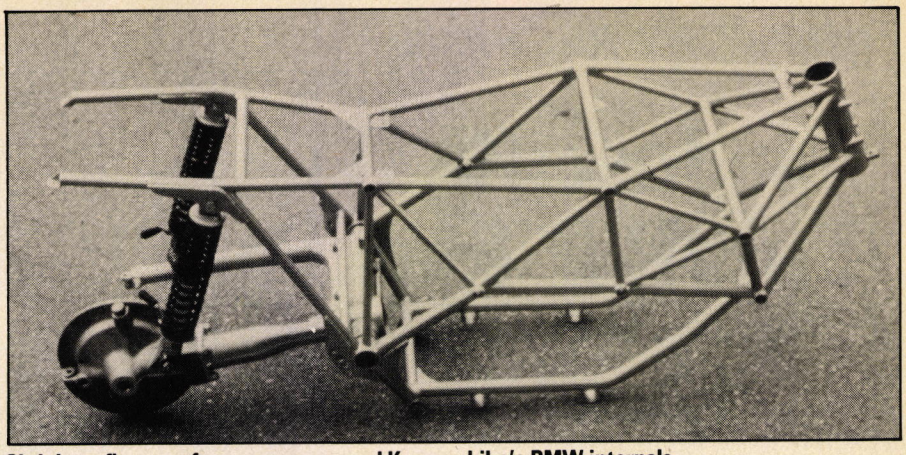
As the open road beckons, the MKM chassis goes to work like no other BMW as well. Not a trace of high-speed BMW-weave can be detected. A wheelbase one-inch longer than the R100S's provides part of the reason. Also, the engine has been raised 25mm in the frame for greater ground clearance, which gives the MKM a higher center of gravity for even more straightline stability.

For all its autobahn-calibrated manners, the Krauser bike adapts to scratching in the corners fairly well. The steering in particular is incredibly precise. The narrow handlebar and high cg prevent you from pitching the bike into corners with abandon, but the MKM's steadiness under all circumstances proves to be a great go-fast asset. The engine complements your roadracing fantasies because the great fund of torque on hand allows you to concentrate on riding instead of shifting. Meanwhile, the oversize Metzeler tires also are up to the roadholding capabilities of the chassis (the swingarm has been widened to permit the installation of the 130/80V18 rear tire).

Still, there's rarely any question about how bikes like the MKM1000 react to speed. It's everyday use that separates the winners from the losers. Because of the use of BMW components, the Krauserbike actually is easier to live with than most one-off machines. Even so, the MKM stumbles when it comes to comfort. Unless you're cruising at more than 80 mph, there's not enough wind pressure to help you sustain the riding position, so the narrow R100RS handlebar soon introduces you to wristwreck. Also, the suspension is simply oversprung. It will pound your joints to powder on any trip over city streets or Interstate. The Europeans unfortunately equate a rocky ride with high performance, thinking that the thumps signal a tautly strung bike that fosters a closer relationship of man and machine. And this classic confusion of stiffness with streetwise roadholding will wear you down after an hour of riding.

Despite its comfort limitations, the MKM1000 is indeed the ultimate BMW it set out to be. It's the sort of motorcycle you'd trailer behind your Audi 5000 Turbo to some Alpine locale for an afternoon run.

It's difficult to know if the MKM design will prove as significant in the long run as Mike Krauser hopes, however. The space frame does indeed combine stiffness with low weight. Also, the MKM frame actually affords access to the engine, allowing you to pull the top end without removing the engine from the frame—although this feature is largely a function of the engine design rather than the frame. Still, this point could be moot, for engine durability these days is such that removing the engine from the frame is an accepted part of major maintenance—as with the Honda CB750. But the spaceframe's advantages are all but cancelled by one thing—price. The MKM1000 will cost $15,000 at various BMW dealers in this country, largely because of the labor cost of building its frame. And for this reason, the Krauserbike will remain one of the world's best limited production BMWs—but probably not the next full-scale production BMW. —*Michael Jordan*



Shrink-to-fit space frame wraps around Krauser bike's BMW internals

Creating a rigid 25-pound birdcage with the aid of computer modeling.

KRAUSER MKM1000

IMPORTER: Krauser USA
7012 Woodlawn Avenue
Seattle, Washington 98115

CATEGORY: street

SUGGESTED RETAIL PRICE: $16,000 (approx.)

ENGINE

Type	four-stroke horizontally opposed twin
Valve arrangement	pushrod-operated overhead valves
Bore and stroke	94.0mm x 70.6mm
Displacement	979.9cc
Compression ratio	8.2:1
Carburetion	two 40mm Bing constant-velocity
Starting system	electric only
Ignition	battery / single points / single coil
Charging system	12-volt alternator

DRIVETRAIN

Primary drive	helical gears
Primary drive ratio	1.5:1
Driveshaft-to-rear-wheel-drive	spiral-bevel gears
Driveshaft-to-rear-wheel ratio	2.91:1

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.93	12.79	6.0
II	1.91	8.34	9.2
III	1.38	6.02	12.7
IV	1.11	4.85	15.8
V	1.00	4.37	17.5

SUSPENSION/WHEEL TRAVEL, IN.

Front	36mm stanchion tube diameter / 5.9 in. (150mm)
Rear	3-way adjustable spring preload / 4.7 in. (119mm)

BRAKES

Front	dual single-action hydraulic calipers, 10.2-in. (260mm) discs
Rear	drum, single-leading shoe, rod-operated

TIRES

Front	3.50V19 Metzeler Perfect ME77
Rear	130/80V18 Metzeler Block C88A Touring Speed

DIMENSIONS AND CAPACITIES

Weight	467 lbs. (212kg)
Weight distribution	46.4% front, 53.6% rear
Wheelbase	59.4 in. (151cm)
Seat height	31.8 in. (808mm)
Handlebar width	23.3 in. (591mm)
Footpeg height	14.8 in. (375mm)
Ground clearance	6.0 in. (152mm), at fairing
Steering head angle	28 degrees from vertical
Front wheel trail	3.9 in. (100mm)
Frame	light alloy tubular space frame
Fuel tank	aluminum, 5.6 gal. (21.1/), including 0.3 gal. (1.1/) reserve
Instrumentation	speedometer, odometer, tripmeter resettable to zero, tachometer, quartz clock, voltmeter

PERFORMANCE

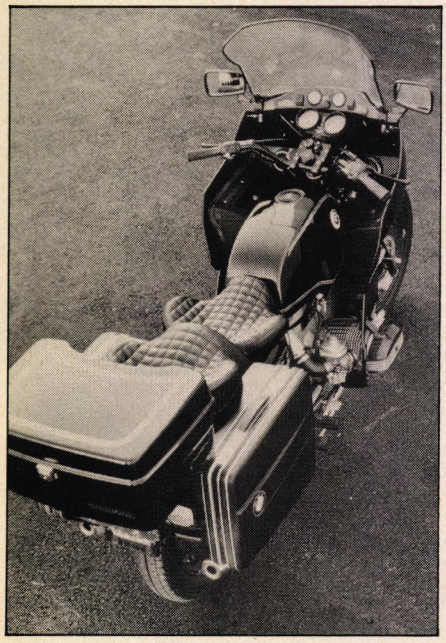
Fuel consumption	49 to 55 mpg (20.8 to 23.4 km/l)
Range, maximum	274 to 308 miles (441 to 496 km)
Range, reserve only	15 to 17 miles (23.6 to 26.5 km)
Top speed (calculated)	123 mph (198 kph)

RIDING IMPRESSION:

San Jose BMW R100RT Tour Pac

A two-wheel billboard for luxo-touring.

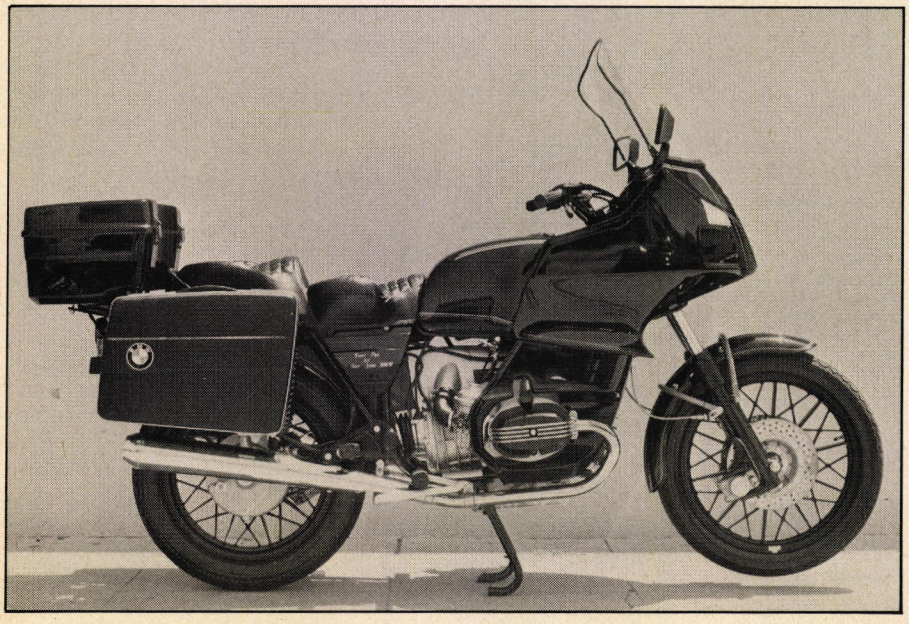
• A lot of riders regard touring as no big deal. To them, a tour is just the next logical step beyond an everyday ride. So, if your normal routine includes some fast canyon romps, they reason, you should be able to plan on the same for your grand tour. Nothing really changes except for the distances covered and the gear you pack.

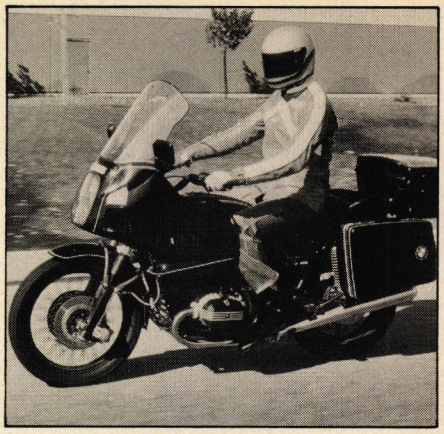


San Jose BMW agrees. Touring is simply riding, and a good touring motorcycle should perform no less capably than any good motorcycle. Its ability to work hairpins and fast sweepers shouldn't be compromised—in fact, it should be enhanced, because a tourer has to deal with every kind of riding condition in the larger portions that an extended tour serves up.

To make that point, San Jose BMW assembled its Tour Pac, a motorcycle that's designed to handle day-to-day touring tasks without losing touch with its Sunday-morning soul. Almost every touring-oriented accessory and performance part San Jose stocks or makes is incorporated into the Tour Pac, which makes it a sort of rolling billboard for bits and services you can apply to any post-1973 BMW.

Riding that billboard proves San Jose's point, in part because the foundation is solid: The Tour Pac started out as a stock 1979 R100RT, a consummate tourer in its own right. To make it better reward the rider who wants to travel far and fast, San Jose applied a few choice licks gleaned from its Superbike racing efforts. A fork brace made of 5/8-inch steel tubing and an aluminum upper triple clamp that is stronger than the stock piece are added to the RT fork. Both parts were lifted straight off of San Jose's AMA Superbike. Besides no longer flexing, the rigidly aligned fork works far more smoothly, thanks to a no-bind matching of slider and fork tube.





SAN JOSE BMW TOUR PAC

MANUFACTURER: San Jose BMW
1886 West San Carlos Street
San Jose, California 91528

CATEGORY: touring

SUGGESTED RETAIL PRICE: $10,245

ENGINE

Type	four-stroke horizontally opposed twin
Valve arrangement	pushrod-operated valves
Bore and stroke	94.0mm x 70.6mm
Displacement	972cc
Compression ratio	9.5:1
Carburetion	two 40mm Bing constant-velocity
Air filter	disposable paper element
Lubrication	wet sump
Starting system	electric only
Ignition	battery/single points/single coil
Charging system	12-volt; alternator, voltage regulator, rectifier

DRIVETRAIN

Primary drive	helical gears
Primary drive ratio	1.50:1
Clutch	dry, single-plate
Driveshaft-to-rear-wheel-drive	spiral-bevel gears, 2.91:1 ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.93	12.79	5.9
II	1.91	8.34	9.1
III	1.38	6.02	12.5
IV	1.11	4.85	15.6
V	1.00	4.37	17.3

SUSPENSION/WHEEL TRAVEL, IN.

Front	36mm stanchion tube diameter/6.5 in. (165.1mm)
Rear	5-way adjustable spring preload/4.5 in. (114.3mm)

BRAKES

Front	dual single-action hydraulic calipers, 10.2-in. (260mm) drilled discs
Rear	single-action hydraulic caliper, 10.2-in. (260mm) drilled disc

TIRES

Front	3.25H19 Continental RB2
Rear	4.00H18 Continental K112

DIMENSIONS AND CAPACITIES

Weight	548 lbs. (249kg)
Gross vehicle weight rating	881 lbs. (400kg)
Wheelbase	58.3 in. (148.3cm)
Seat height	32.2 in. (818mm)
Handlebar width	27.6 in. (701mm)
Footpeg height	11.5 in. (292mm)
Ground clearance	6.5 in. (165mm), at engine crankcase
Steering head angle	28.0 degrees from vertical
Front wheel trail	3.5 in. (89mm)
Frame	tubular mild steel, double front downtubes
Oil capacity	2.4 qt. (2.3 l)
Fuel tank	steel, 5.8 gal. (22.0 l), including 1.2 gal. (4.6 l) reserve
Instrumentation	speedometer, odometer, tripmeter resettable to zero, tachometer, quartz clock, voltmeter

PERFORMANCE

Fuel consumption	27 to 57 mph (11.5 to 24.2 km/l)
Range, maximum	156 to 330 miles (251 to 530km)
Range, reserve only	32 to 68 miles (51 to 109km)
Top speed (calculated)	119 mph (191 kph)

Next, the Tour Pac uses a pair of four-inch anti-bottoming springs to replace the rubber bumper in each RT fork tube. With the springs in place, even the weight of the RT's full fairing won't bottom the fork when you're deep into a turn. And straight-line stopping is far more controllable, since the Tour Pac doesn't drop to its knees in heavy braking.

With the fork in order, SJ-BMW began to work its way to the rear of the RT. To cut down on frame flex and vibration, a motor mount was added to join the rear of the engine to the frame. Then, the swingarm was strengthened by welding on triangulated sections of ¾-inch steel tubing. Finally, Koni shocks with stiffer damping rates than the RT shocks were matched with RT springs and bolted in place. The result is an RT that corners hard without flex or wallow, a touring bike that you can push through sweepers for mile after mile without complaint.

Long hours in the saddle of a tautly suspended motorcycle should be memorable, but they shouldn't conjure up recollections of numbutt, shatterspine or other related moto-miseries. Recognizing this, SJ-BMW turned to creature comforts. A Meyer Day Long Custom Saddle comfortably supports the weight of any long-haul Tour Pac rider, which is fortunate, since the SAC Bar-Backs will force him to sit bolt upright. At least the RT's adjustable windscreen can be brought into play, tilting up to keep even tall-in-the-saddle-types out of the windstream. With the Tour Pac's throne properly set, you can pass hour after hour in abject contentment, the tach nudging four grand and the world rolling by at a relaxed 65 mph. There's no built-in reason to stop cruising, either, because in addition to the two detachable BMW Motobags, a Luftmeister Boot Box has been added. Between the three cases is enough empty space to pack more than you'll need for a two-week tour.

Unlike the San Jose Sport Pac R100S we tested (May 1980 issue), the Tour Pac's engine is bone-stock. The only change SJ-BMW made to bolster engine performance was to drill the exhaust baffles. That sounds like a counterproductive case of heightening the exhaust drone for your trip down the Superslab, but it's not. Below four grand, the only result of the drilling is a slightly deeper rumble rolling out of the exhaust. Once you whack open the throttle, though, be prepared for a banshee moan that arrives straight from Daytona 1976, where a pair of Butler & Smith BMWs swept the Superbike race. Once you dial the Tour Pac into sport mode, its sedate surfaces peel back to show the raw edges of a performance bike in heat.

For some, a $10,000 Tour Pac will make perfect sense. Even the $869 Motosport Black paint job and the electrostatically painted wheels, handlebar and shock springs can be justified if you start from the proper mindset. But that's the real beauty of the Tour Pac; you don't *have* to buy the whole thing. The bike was never intended to be the final vision of The One True Tourer, only a two-wheel full-color catalog. —*Larry Works*

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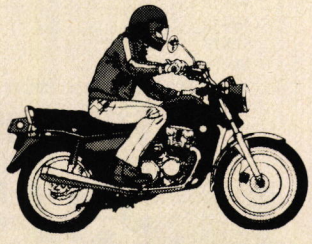

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PRODUCT EVALUATION:

Tourmaster Warm-Weather Jacket

Let the sun shine . . . all year long.

• There's been a lot of hot air blown around about winter riding jackets, but seldom do you get wind of something for balmy weather. And after all, warm weather is what generally brings out the majority of us two-wheel pleasure riders.

Well, for you fair-weather fans, here's a coat that should hold some interest—the Tourmaster summer riding jacket. At a glance, this summer garment is cloned from the Tourmaster winter jacket evaluated in our March 1980 issue, but there's no bulky insulation beneath the nylon shell.

You might view the black nylon jacket as nothing more than a windbreaker with four huge front pockets. But unlike those low-buck windbreakers you can buy in most chain sporting-goods stores, the Tourmaster jacket is meant for riding: It won't shred apart and the sleeves don't creep up to your elbows at speeds common to motorcycle touring.

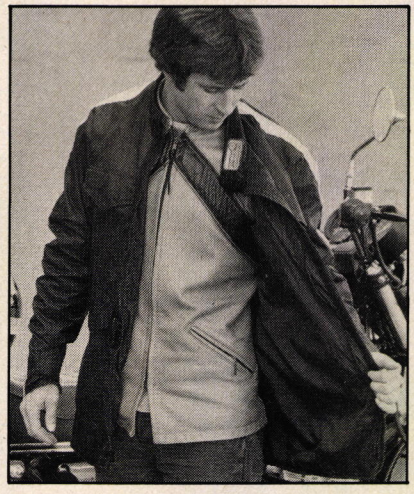
Although Tourmaster intends that the cold weather chores be given to the winter jacket, I regard this summer coat as an all-weather riding jacket. You see, I prefer the added security of leather, so I like to always wear my Bates jacket when I ride. Since leather isn't as weatherproof as the Tourmaster, though, I elected to fit the nylon coat *over* my leather jacket for cold-weather riding. Used this way, it worked just fine in nipping the cold before it nipped at me.

And, too, the nylon shell is treated with waterproof urethane, so when the grey clouds overhead pour down on me, nothing seeps through. By treating the seams with a sealer from Tourmaster, everything is pretty much watertight. Tourmaster further claims that the urethane treatment won't deteriorate from washing, so when you accumulate an overdose of kamikaze bug spots, just put the coat through the machine's wash cycle and carry on.

Other than the yellow-bordered reflective stripes on the sleeves and back, the summer suit's shell is more or less the same as Tourmaster's winter jacket. All changes made to the winter jacket since our March evaluation have been carried out to the summer line, including: four Velcro-sealed pockets instead of three, less Velcro around the sleeve cuffs and collar, a corduroy-lined collar and a YKK nylon front zipper.

But for the $84.95 price you get more than just a hollow winter shell. There's a pair of vertical zippers at the small of the back, which when opened expose a storage space just large enough to hold a sweater. And since the jacket is meant for warm-weather riding, a horizontal zipper across the shoulder blades opens to a vent.

The suit comes in sizes Small to Extra Large. Although I normally wear medium, I opted for a Large to fit over my leather jacket. During a trip through the High Sierras last fall, the nylon/leather combination did a heart-warming job of holding out the cold, even when the thermometer's mercury dipped near freezing just outside of Carson City, Nevada. You can order the Tourmaster riding jacket through Helmet House, 2115 Colorado Avenue, Santa Monica, California 90404. —*Dain Gingerelli*



Two-layer nylon holds out the wind

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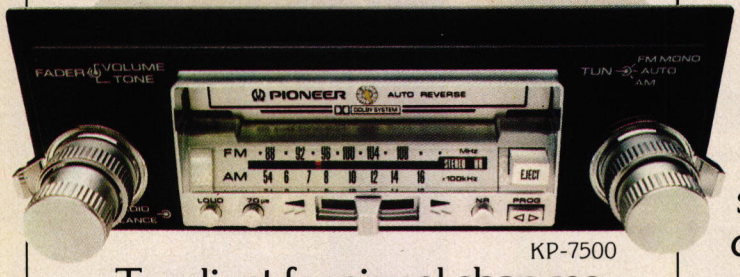

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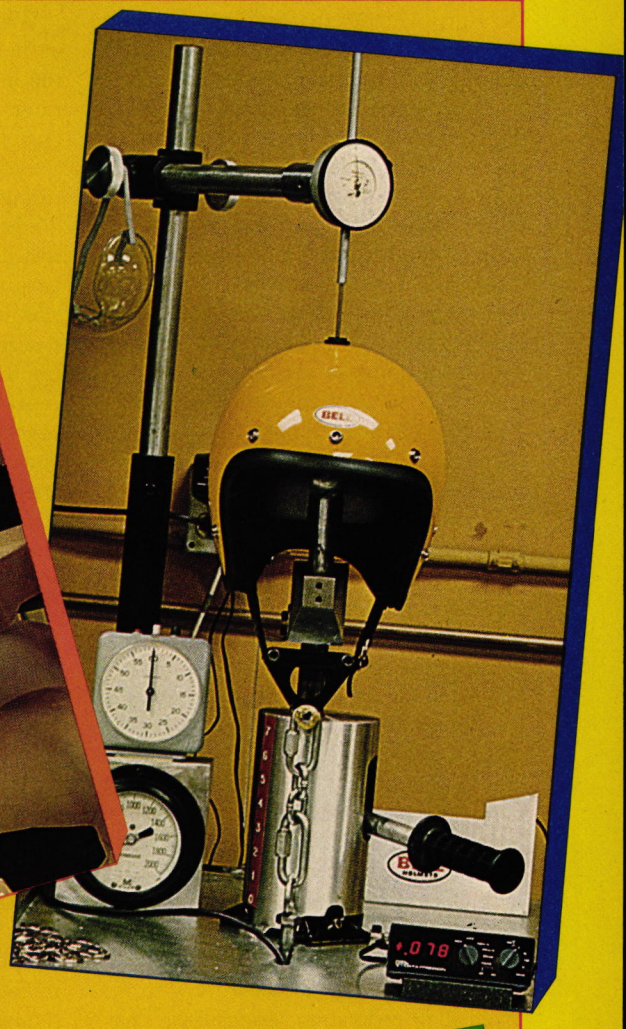
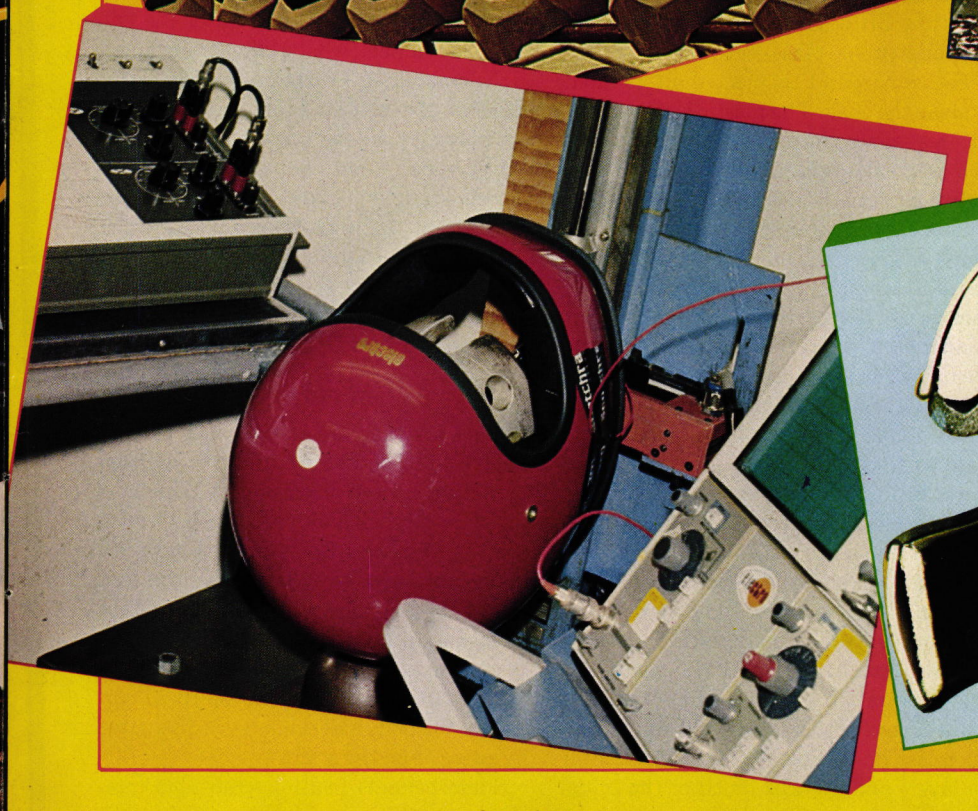
HELMETS:

A Complete Buyer's Guide. Who makes them, how much they cost, how they're rated, where to get them.





HELMETS are serious tools that perform a serious job, and there's no question that when you're involved in an accident on a motorcycle you're better off wearing a helmet than not. "It's hard to find a bad helmet," says Dr. Harry Hurt of the Traffic Safety Center at the University of Southern California. "In the typical accident we studied—a 22-mph impact, the car driver at fault—we found that a $25 helmet protects as well as the most expensive models.

"I have no doubt, however," he continues, "that the more coverage you afford yourself the better off you'll be—and in a serious accident the best coverage gives the best protection—but we found that popularly available helmets are not the problem with head-injury fatalities; people are. At least 50 percent of the riding population does not wear helmets, and those riders are dying at a ratio of seven-to-one over helmeted riders in the typical accident."

Dr. Hurt should know. As the head of a research team commissioned in 1975 by NHTSA, he has compiled a voluminous statistical reference work concerning almost 4500 motorcycle accidents, including 899 on-site, in-depth reconstructions of the accident details within 24 hours of their occurrence. The reading is not pretty, nor is it intended to be, but the conclusions are inescapable: "The use of a safety helmet (by a motorcyclist) is the single critical factor in the prevention or reduction of a head injury"; and "The safety helmet is a significantly effective injury countermeasure."

Most of us don't like to think about The Accident: when it will occur, how to best avoid it or reduce its seriousness. That's too bad, because the odds are that if you ride a motorcycle you're going to fall down sometime, and statistics say that it probably won't be your fault. Fifty-one percent of the accidents studied by Dr. Hurt were caused by a motorist who failed to detect and recognize a motorcycle. The typical crash occurred in moderate to heavy urban traffic, at an unrestricted (no signal) intersection, and within six riding minutes of the victim's trip origin. The typical cause was a motorist turning left in front of an oncoming bike; the typical excuse was "I didn't see him."

Sound familiar? It should, because the plain fact is that motorcycling is dangerous mostly because the other guys out there in four- or more-wheelers make it that way. And not being at fault is little solace to those unprotected parts of your anatomy that make contact with the road. Particularly your head.

Broken arms, skinned palms, cut shins will heal. Crushed skulls will not. As motorcyclists, we must prepare ourselves to survive in a very real and occasionally brutal world—and the first step toward that end is to cover the cranium, to protect the brain at all cost.

Which brings us to this Special Edition on helmets, a guide to what we believe is the most important accessory purchase a rider can make. We wear helmets, *every* one of us, *every* time we ride. You'll never see a photo in this magazine of someone riding a motorcycle without the appropriate headgear. Ultimately, of course, if you live in a state that doesn't have helmet laws, you have to resolve the Helmet Question for yourself. To prepare you for that decision, we've assembled more than 40 photos from 16 different manufacturers representing 90 percent of the available market. Included is information about each of the helmets pictured, but because the companies herein make more hats than we could show you, we've also printed their addresses so you can contact them for more details.

Many of the product descriptions on the following pages contain much the same information. That's because style, paint, decals and exterior "looks" notwithstanding, there are only a few ways to effect a competent design. Here are the basics:

OUTER SHELL

Polycarbonate construction generally produces the lightest and least expensive helmets. Sheets of polycarbonate material—like GE *Lexan,* which is also utilized in bulletproof glass—are either thermoformed around or injected into a mold to make the shell. The plastic has good impact resistance and excellent anti-penetration properties, with two drawbacks: Its effective lifetime is less than that of some other helmet materials; and its chemical composition can change under certain circumstances. *Do Not* paint or affix decals or stickies to a polycarbonate helmet. *Do Not* clean it with strong solvents. *Do Not* store the helmet in an environment where it will contact gasoline, cleaning agents or exhaust fumes. Watch for light-brown spots close to rivets; those are signals that the composition is changing and that the helmet may be ineffective.

Fiberglass can either be hand-layered, machine-layered or heat-formed around a mold to achieve a helmet shell. It is probably the most popular material in the industry, with excellent impact resistance and anti-penetration qualities when used in a multi-layer form. In the event of a crash, fiberglass de-laminates (pulls apart, layer by layer) and absorbs much of the initial impact energy in the process. A fiberglass helmet is more expensive than a polycarbonate model because of the steps involved in manufacturing, but it accepts different paints well and can be personalized with decals or stickies without losing structural integrity. If a fiberglass helmet is dropped, check it for cracks, breaks or any sign of de-lamination. Use only mild cleaning agents.

Kevlar 49 is a space-age plastic by DuPont used by one helmet manufacturer in combination with fiberglass to achieve a strong but lightweight shell. Kevlar requires an expensive, hand-layering process when used in helmets, but it could herald future plastic/fiberglass combinations by other industry members. The properties are much the same as with fiberglass helmets, including customizing and cleaning, but with a significant reduction in weight.

All helmet shells are built to satisfy a form-and-function equation as the utmost priority, but that doesn't mean the manufacturers have left style on the factory floor. Color coordinating their products to popular bikes and apparel makes sense to the companies in this Special Edition, because it bears fruit in retail sales. A wide range of color choices, including metallics and swirl designs, plus pinstriping and decal graphics are evidenced in the following pages; the variety of options means that you can sport a skid lid that makes good sense and looks good, too.

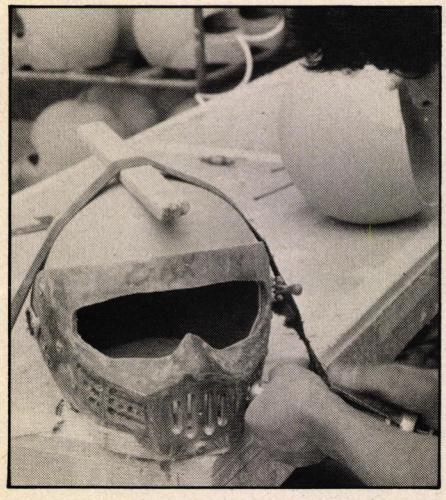
INNER LINER

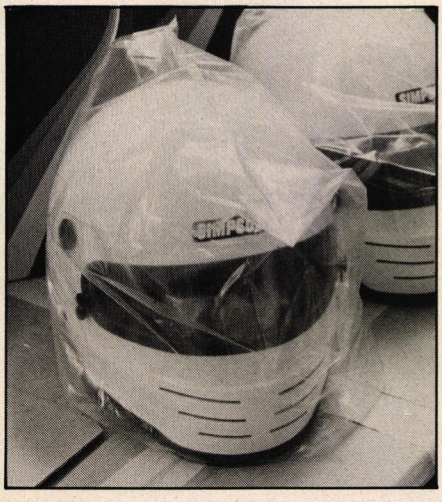
Outer shells cannot absorb all of the energy of an impact; what's left is transferred to the inner liner. Two foam-based plastics are used almost universally in the industry: polystyrene (aka styrene or expanded polystyrene), and polyurethane. The styrene group is a non-resilient foam that spreads out the impact evenly inside the shell. Polyurethane performs the same function, but it is semi-resilient and has "bounce-back" properties that can help in a multiple-impact fall.

INTERIOR

Helmet interiors are the "fit and feel" of the business, and have little to do with attenuating serious impact. If a blow gets through the shell and liner, brushed nylon can't be of much help as a safety item. It's important, however, to consider comfort, fit and the presence or absence of padding. Washable interiors are important for off-road helmets in particular and most helmets in general, because up to 70 percent of the body's heat energy is dissipated by sweat from the scalp.

Some helmets feature removable inte-





Helmets are serious business, and it all begins with the first layer of fiberglass

Think of these colorful cranium covers as crash insurance for you.

riors for easy cleaning; check with the manufacturer beforehand, though, for details. Most other interiors can be sponged with a solution of water and mild detergent (like dish soap) and left to air-dry. The drying process will vary, depending on material, and in some cases can take a few days. Speeding it up with a hair-blower set to "air" or "no heat" can help, but the best advice is not to saturate the interior in the first place. Lastly, try not to use strong cleaning agents because the chemical fumes will adhere in some cases.

STANDARDS/APPROVALS

As of May 1, 1980, every helmet offered for sale in America (except Children's sizes and off-road-only models) must carry a DOT approval and have the month and date of Manufacture clearly stamped on the chin strap. A DOT sticker must be plainly visible at the exterior rear of the helmet. All of the full- and open-face helmets in this Special Edition are DOT-approved, so we have only noted which of the off-road models are also approved for on-road use.

The new DOT standard is an amalgamation of previous government regulations and the ANSI (American National Standards Institute) Z-90.1 approval. It is, according to Dr. Hurt, "a good standard, with sufficient impact-severity testing. On a scale of 100, the DOT approval requires surviving a 98th-percentile hit," he says.

The upper strata of impact-severity testing is conducted at the Snell Memorial Foundation. The Snell 75 standards are the toughest in the industry and, though voluntary, indicate that a helmet has superior resistance to impact and penetration. A Snell 75 sticker glued into the interior of a helmet means that the product meets or exceeds the most stringent of helmet performance parameters.

This Specal Edition was compiled from information supplied by the manufacturers, including retail prices. (A note: because of the extensive use of petrochemical products in the making of helmets, those prices quoted are *suggested* retail.) We won't tell you which helmet to buy; that decision is up to you. But we're pretty sure if you've stayed with us this far that a helmet purchase is on your mind.

Good. We applaud your common sense. For those few nonbelievers left, there is a final statistic from the Hurt Study, a quote directly from the text:

"When head impact did occur (as a result of an accident), the safety helmet prevented or attenuated the impact injury 80.9 percent of the time."

A serious subject? You bet your life it is.

Continued

AMF/Harley-Davidson

689 Hope St.
Stamford, CT 06907
(203) 325-2211
Price: $69.95 to 89.95

H-D's X-100 Series of full-face helmets are constructed of multi-layered fiberglass and isothalic resin, laminated in specific patterns for strength and impact distribution. They allow 120 degrees of peripheral vision and are compatible with glasses. A soft-nylon interior and a tubular nylon chin strap are comfort features. Color choices are white ($69.95), black ($74.95), or color-coordinated to the latest H-D models from $79.95-89.95. Sizes are Small, Medium, Large and Extra Large; white and black colors may be ordered Extra-Extra Large. Catalog and information at Harley-Davidson dealers.

Harley-Davidson

Price: $99.95

The top-of-the-line Harley hat is a fiberglass and isothalic resin model that meets or exceeds the Snell Memorial Foundation 1975 standards. The helmet is offered in orange-and-black H-D racing team colors only, and is available in sizes Small through Extra Large. An open-face model with a Snell 75 certification is also available for $75.95.

Arai Helmets, Ltd.

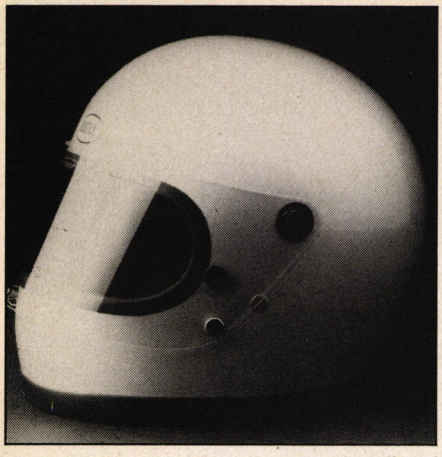
54 Jefferson Ave.
Cresskill, NJ 07626
(201) 567-5707
Price: $87.95 to 98.95

Arai's X-75 full-face helmet is constructed of multi-layered fiberglass, and weighs 3½ pounds. The expanded styrofoam inner liner is more than one inch thick and is covered with blue satin, and the fully padded interior has brushed nylon interfacing. Outer trim is simulated leather, and the faceshield moves on an Arai-patented pivot mechanism. The X-75 meets or exceeds Snell 75 standards. Available in a variety of standard solid colors for $87.95, or in the new pearlescent white Vintage Series with gold pinstriping for $98.95. Sizes are Small through Extra-Extra Large. Catalog available.

Arthur Fulmer

P.O. Box 177
Memphis, TN 38101
(901) 525-5711
Price: $114.95

The AF-50 EAGLE is Arthur Fulmer's newest full-face helmet design. It features an outer shell of aircraft-quality multi-layered fiberglass and an inner liner of impact-absorbing polyurethane foam. A second layer of foam, plus a neck roll and extra-wide chin strap are interior comfort features. The side graphic is reflective black with gold trim, and available colors are Burgundy, Black or Carbon Silver. Sizes are Small, Medium, Large and Extra Large. Brochure available.



Bell Helmets, Inc.

15301 Shoemaker Ave.
Norwalk, CA 90650
(213) 921-9451
Price: $129.50

The STAR II is Bell's top-of-the-line full-face helmet, with a Snell 75 certification for AMA racing and a DOT approval for on-highway use. The outer shell is constructed of cross-layered, hand-laminated fiberglass, and the inner liner is expanded polystyrene. An interior of fully padded nylon, with neck roll, and a clear or green-tint faceshield are standard. Available in white, yellow or black fade-resistant finishes with Bell graphic; sizes are 6¾ to 7⅞ in ⅛-inch increments. Catalog available at Bell retail dealers.

Bell Helmets

Price: $97.50

The TOURSTAR is a lightweight Bell full-face helmet constructed of a hand-laminated fiberglass shell with an expanded polystyrene inner liner. The interior is fully padded brushed nylon, and the faceshield closes flush over the eyeport to reduce wind resistance and noise. The Bell-patented faceshield pivot allows the rider to cruise with the shield open in any of four positions. Colors are white, red, black, metallic blue or metallic maroon; sizes are 6⅞ to 7⅝. Finished in fade-resistant urethane.

Electro Helmets

Electrofilm Inc.
7116 Laurel Canyon Blvd.
North Hollywood, CA 91605
(213) 764-0200
Price: $129.95 to 147.95

Electro's E-3 full-face features an outer shell of hand-laminated aircraft-quality fiberglass and an inner liner of expanded polystyrene that is completely covered with black, continuous-loop nylon fabric. Comfort features are overstuffed cheek pads, foam neck roll and Electro's exclusive "air-dam" rubber edge beading, which channels wind noise away from the ears. The clear faceshield is fully adjustable and closes with no snaps. Custom-fit sizes are in ⅛-inch increments from 6⅞ to 7⅝. Colors are white, red, orange, yellow or black Radiant ($129.95); silver, wine, blue or bronze Metallic ($132.95); or black or white with International side graphic ($147.95.) The E-3 is Snell 75 approved. Catalog available.

Famoso Helmets

17101 S. Central Ave. #I
Carson, CA 90746
(213) 639-4570
Price: $112.00

The CR-20 full-face helmet is designed in Italy by Famoso and will be available here by Christmas, pending DOT approval. It features a six-layer fiberglass shell, a polystyrene inner liner and a brushed nylon interior. Sizes are Small through Extra Large; colors are white, red, yellow, orange and black, or blue or gray metallic. Catalog available for $2 from Famoso.

Fury Helmets

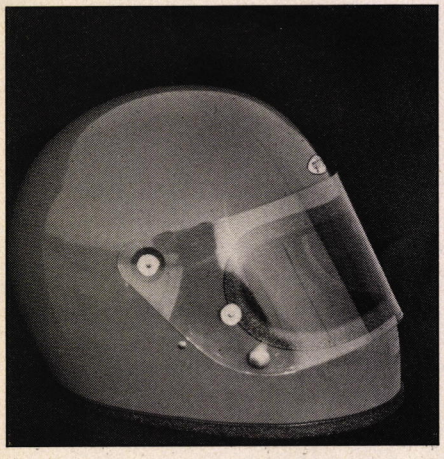
American Sports Co. Inc.
2970 E. Maria St.
Compton, CA 90221
(213) 636-9978
Price: $93.95

The Fury PROFESSIONAL Full-face helmet shell is constructed of multi-layer fiberglass over an expanded polystyrene inner liner. The interior is fully padded brushed nylon with a cushioned neck roll, and the exterior is beaded with rubber. Fury's Professional Series of helmets meets or exceeds Snell 75 standards. Color choices are white, red, blue, yellow, silver or black; sizes are Small through Extra Large. Fury also offers four other lines of Snell 75 approved full-face helmets in a variety of colors and designs and with Trylon interiors, for $79.95. Catalog available.

Grant/LTC

Land Tool Company
650 E. Gilbert St.
Wichita, KS 67211
(316) 265-5665
Price: $45.95 to 49.95

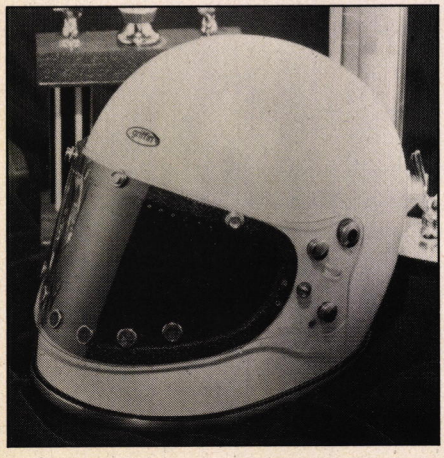
The Grant/LTC SPORTSMAN full-face helmet features a one-piece outer shell of molded GE *Lexan* with an impact-absorbing styrene inner liner and a foam-padded nylon interior. It is offered in a variety of solid colors and stripes, and can be ordered in candy-apple, metalflake or custom paint for a few dollars extra. A five-snap shield retention design accommodates a full line of Grant/LTC snap-on accessories, including flat, bubble and flip-up shields. Sizes are Small (6½–6¾), Medium (6⅞–7⅛), Large (7¼–7⅜) and Extra Large (7½–7¾).



Griffin Corp.

P.O. Box 426
Andover, KS 67002
(800) 835-3200
Price: $54.95

The Griffin MACH II full-face helmet incorporates a one-piece outer shell design of injection-molded extra-thick polycarbonate with an inner liner of heavy-duty styrofoam for impact absorption. The interior is brushed nylon, and a full flip-up shield comes standard. Color choices are solid only, either white, black, red, blue, yellow or orange. Sizes are Small, Medium, Large or Extra Large.



Griffin Corp.

Price: $89.95

The GALAXY II is Griffin's top-of-the-line full-face helmet, featuring a one-piece outer shell of extra thick polycarbonate and an energy-absorbing inner liner of styrofoam. The brushed nylon interior is complimented by leather outer trimming, and a nine-snap pivoting faceshield comes standard. Color is white only, and size availability is Small, Medium, Large or Extra Large. Catalog N/A.

KRW Helmets

American Sports Co Inc.
2970 E. Maria St.
Compton, CA 90221
(213) 636-9978
Price: NA

The new KRW TURBO full-face helmet is just now entering the market, so the retail price was not established at press time. The outer shell is multi-layer fiberglass, the inner liner is expanded polystyrene and the interior is covered with brushed nylon. The clear or smoke faceshield is recessed, and pivots on KRW's exclusive Ratchet-Loc mechanism. Ribbed vents in the face piece increase the interior air flow and feature dust shields for easier breathing. The Turbo is Snell 75 and DOT approved. Sizes are Small through Extra Large; colors are white, black, red metallic or blue metallic. Catalog available.

KRW Helmets

American Sports Co. Inc.
2970 E. Maria St.
Compton, CA 90221
(213) 636-9978
Price: $95.99 to $135.95

KRW's PREFERRED 5000 features a multi-layer fiberglass shell and a one-piece styrene inner liner. The padded brushed mizar interior includes a foam neck roll, and all outer edges are beaded with natural rubber. A clear acetate faceshield with Ratchet-Loc pivots is standard. The helmet is Snell 75 certified. Sizes are Small through Extra Large. Colors are white, silver and black ($95.99); color-matched to most popular motorcycles ($99.95); Universal Competition with hand-finished graphics ($124.95); and personalized with rider's name ($135.95). Catalog available.

Nava Helmets

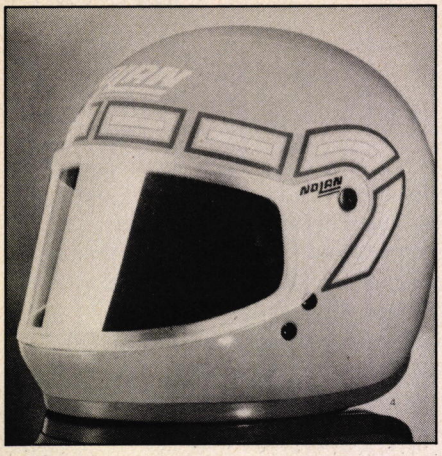
Performance Sales Associates, Inc.
18645 Sherman Way Suite 213
Reseda, CA 91335
(213) 881-9373
Price: $94.95 to 109.95

The INTEGRAL NAVA 2 is an Italian helmet formed through an electronically controlled molding process from GE *Lexan* polycarbonate. The helmet contour is a smooth line, with no protruding or recessed parts, and the hinged faceshield is designed to lower from the open position automatically at 35 mph and close flush at speeds over 50 mph. With an inner liner of expanded polystyrene, the Integral Nava 2 comes in five sizes ranging from Small to Extra-Extra Large. Colors are white, blue, red, yellow, orange, black, or black-and-gold. Price fluctuations are due to distributor shipping and handling costs. Catalog available.

Nolan Helmets

Motosport Inc.
24 South Orange Ave.
South Orange, NJ 07079
(201) 761-7601
Price: $84.00

The N-18 full-face helmet is made in Italy by Nolan and features an outer shell of injection-molded GE *Lexan* polycarbonate with a 30mm-thick inner styrene liner. The padded and quilted interior comes with standard cheek pads, but two other pad thicknesses are available at $9 each. The N-18 utilizes a patented "Cam-Lobe" visor system, with three detent positions. Sizes are Small through Extra Large; colors are white, blue, red, yellow, green, orange or black. The N-18 is also available with 3-M reflective tape for $89. Sold through retail outlets only.



Nolan Helmets

Price: $84.00

Nolan's N-31 full-face helmet has an outer shell of injection-molded GE *Lexan* polycarbonate material with an inner liner of expanded polystyrene. The padded interior is covered in synthetic velvet and the standard cheek pads can be interchanged with one of two different thicknesses for an additional $9. The clear visor (light and dark tints available) features an "automatic" spring-loaded operation with no hinges or snaps. Sizes are Small through Extra Large; colors are white, red, blue, yellow or black. Also offered with 3-M reflective tape for $89.

Premier Helmets

1559 W. 135th St.
Gardena, CA 90249
(213) 515-5861
Price: $89.95

The P555 is Premier's newest full-face design featuring an outer shell of multi-layered, hand-crafted fiberglass. The inner liner is formed of energy-absorbing expanded polystyrene, and the interior is offered in either brushed or tricot nylon. Six solid colors, plus a full range of combination colors and designs are available at the base price, as is a clear or smoke flip shield. Weight is 3½ pounds, size options are Extra Small through Extra Large. Catalog available.

Shoei Helmets

1717 Pontius Ave.
Los Angeles, CA 90025
(213) 477-6051
Price: $130.00

The ZG-II is Shoei's top-of-the-line full-face helmet, constructed of fiberglass and aromatic polyamide fibers that are machine pressure-molded for consistent quality control. The inner liner is high-impact, non-resilient styrofoam, and the brushed nylon interior is fully foam padded. Outer trim is rubber. Color choices are white, blue, red, silver, yellow or black; sizes are Small through Extra Large. The ZG-II meets or exceeds the Snell 75 standards. Catalog available.

Simpson Sports

22630 S. Normandie Ave.
Torrance, CA 90502
(213) 320-2204
Price: $195.00

The Simpson MODEL 30 features a handmade outer shell of Kevlar 49 and fiberglass in a unique "Darth Vader" style. The inner liner is dual-density styrene that progressively cushions impact, and the padded interior, with neck roll, is covered in brushed nylon. The Model 30 is Snell 75 approved. A *Lexan* Hydron shield comes standard, as do aluminum pivot pins, retainer clips and weatherstripping. The mouth and face guard vent ports are a Simpson full-face exclusive. Colors are Jet Black, Comp Silver or Indy Red. Sizes are in ⅛-inch increments from 6⅞ to 7¾. Catalog available.

FULL-FACE

Simpson Sports

Price: $124.16

MODEL 61 is the newest full-face design by Simpson. Standard features include an outer shell of hand-crafted Kevlar 49 and fiberglass, a dual-density styrene inner liner, a padded neck roll and interior covered in brushed nylon, and replaceable ear pads. The flush-mount faceshield pivots on aluminum pins and is retained on aluminum clips; vent ports in the face guard help lessen shield fogging. Hat sizes are 6⅞ to 7¾; colors are Jet Black or Comp Silver in fire-retardant epoxy paint. Meets or exceeds Snell 75 standards. Catalog available.

Yamaha Parts Distributors, Inc.

6555 Katella Ave.
Cypress, CA 90630
(714) 761-7300
Price: $99.95 Full-face
$74.95 Open-face

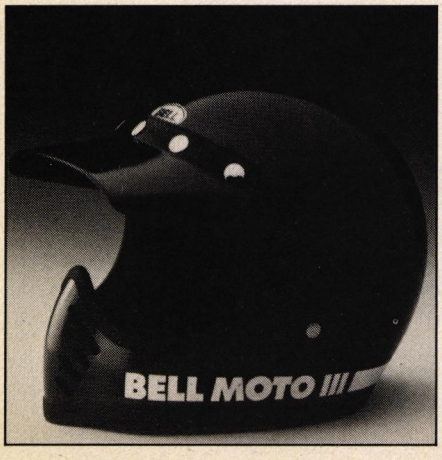
Yamaha's XS Series helmets are offered in full- and open-face styles that incorporate the same design features. Constructed of multi-layer fiberglass shells, resilient polyurethane foam inner liners and fully padded interiors lined with brushed nylon fabric, the XS Series helmets are available in Small, Medium, Large and Extra Large sizes. Paint finishes are electrostatically applied, and a clear top coat protects the color and seals the pinstriping. Colors are Frost Silver, Cardinal Red, Ruby Red, and Yamaha Black. Available through Yamaha dealers.

OFF-ROAD

Arai Helmets, Ltd.

54 Jefferson Ave.
Cresskill, NJ 07626
(201) 567-5707
Price: $114.95

Arai's RMX is an off-road-only helmet that meets or exceeds the Snell 75 standards but is not approved for highway use. It has an all-fiberglass outer shell with an exclusive top drain plug to expedite drying after the interior has been washed. An expanded foam inner liner and a padded interior with washable, sewn-in fabric are additional features. The mouth/face guard is rubberized nylon and can be adjusted up and down, forward and backward to suit the rider. The five-snap visor has a "super-seal" top edge to help keep water and mud out. Sizes are Small to Extra Large; colors are white, red, blue or yellow. Catalog available.



Bell Helmets Inc.

15301 Shoemaker Ave.
Norwalk, CA 90650
(213) 921-9451
Price: $119.95

The MOTO III By Bell is Snell 75 certified for AMA competition, and also carries a DOT-approval for on-highway use. It features a cross-layer hand-laminated fiberglass shell, an expanded polystyrene liner, neoprene molding and a brushed nylon padded interior. The contoured shape protects the nose, mouth and chin, with eight-slot air vents and an integral dust filter for added comfort. A five-snap Hallman-type visor is standard. Colors are white, blue, red or yellow; sizes are 6⅞ to 7⅝. Catalog available at Bell retail dealers.

Electro Helmets

Electrofilm Inc.
7116 Laurel Canyon Blvd.
North Hollywood, CA 91605
(213) 764-0200
Price: $129.95

Electro's C-TYPE off-road helmet carries both the DOT and Snell 75 approvals. Its construction is of hand-laminated five-layer aircraft-quality fiberglass, with an inner liner of expanded polystyrene and a padded interior covered with continuous-loop nylon. The mouth/face guard is solid and integral with the entire design, and allows room for goggles. The inner liner is laterally ribbed to improve air circulation within. Color choices are white, red, yellow or black. The C-Type is offered in hat sizes from 6⅞ to 7⅝. Catalog available.

Fury Helmets

American Sports Co. Inc.
2970 E. Maria St.
Compton, CA 90221
(213) 636-9978
Price: $99.95

The MOTO X by Fury carries both the DOT and Snell 75 approvals, and is therefore sold for either on- or off-highway use. It features an outer shell of multi-layer fiberglass, an inner liner of expanded polystyrene and a padded interior covered in trylon. Rubberloc beading protects all exposed edges. The facial section has six air vents, a dust filter and a ribbed design to add structural strength. A clear three-snap visor comes standard. Available in white, red or yellow; sizes are Small through Extra Large. Catalog available.

KRW Helmets

American Sports Co. Inc.
2970 E. Maria St.
Compton, CA 90221
(213) 636-9978
Price: $105.95

KRW's MOTO X features an outer shell of multi-layered fiberglass with a face protector that is ribbed for greater structural strength. The face protector has six air vents and a dust filter. The interior is padded brushed mizar, and rubber edge beading and a clear visor with KRW decal come standard. The Moto X carries both DOT and Snell 75 approvals. Available in sizes Small through Extra Large; colors are white, yellow and red. The helmet is also offered in personalized form, with rider number and name, for $135.95. Catalog available.

Shoei Helmets

1717 Pontius Ave.
Los Angeles, CA 90025
(213) 477-6051
Price: $117.00

The EX-3 is Shoei's newest off-road helmet that meets or exceeds the Snell 75 standards. The outer shell is a combination of pressure-molded fiberglass and aromatic polyamide fibers, and the inner liner is one-piece non-resilient styrofoam. An eight-slot ventilated mouth guard and an interior of brushed nylon-covered foam are comfort features. Sizes are Small through Extra Large; colors are white, blue, red, silver, yellow or black. Catalog available.

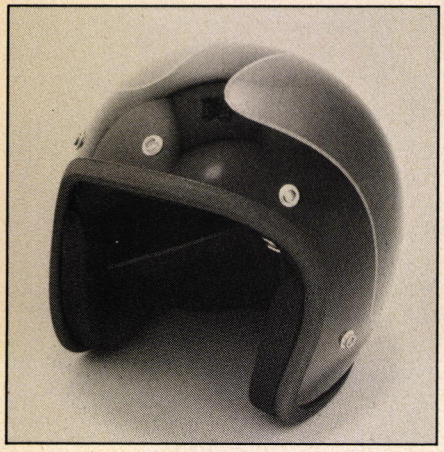
OFF-ROAD

Simpson Sports

22630 S. Normandie Ave.
Torrance, CA 90502
(213) 320-2204
Price: $124.16

Simpson's MODEL 50 helmet is Snell 75 and DOT certified for either on- or off-road use. The outer shell is handmade from Kevlar 49 and fiberglass, and the inner liner is dual-density styrene for progressive impact cushioning. A fully padded interior is covered in brushed nylon. The wide-window eyeport accepts most popular goggles, and the ventilated chin guard is integral with the helmet design. A five-snap Hallman-type visor and internal cheek pads are standard. Available colors are MX Red, Stadium Yellow or Jet Black; sizes are 6⅞ to 7¾. Catalog available.

OPEN-FACE



AMF/Harley-Davidson

689 Hope St.
Stamford, CT 06907
(203) 325-2211
Price: $49.95 to 69.95

The Harley-Davidson COMPACT open-face helmets have outer shells of multi-layered fiberglass, styrofoam inner liners and padded nylon interiors. A five-snap design accommodates a host of H-D visors and faceshields, and the helmets are compatible with glasses. Available in white or black for $49.95, or color-coordinated to the latest H-D models from $59.95-69.95. Sizes are Small through Extra Large; white and black colors also come Extra-Extra Large. Catalog and information at H-D dealers.

Arai Helmets, Ltd.

54 Jefferson Ave.
Cresskill, NJ 07626
(201) 567-5707
Price: $67.95 to 78.95

The S-75 is an open-face companion to Arai's full-face X-75 helmet. Features include an all-fiberglass outer shell, an expanded foam inner liner covered in blue satin and a padded interior with brushed nylon interfacing. Outer trim is simulated leather in a diamond-stitch pattern. Sizes are Small through Extra Large; colors are a variety of solids ($67.95) or the new Vintage Series with gold pinstriping ($78.95.) The S-75 meets or exceeds the Snell 75 standards. Catalog available.

Arthur Fulmer

P.O. Box 177
Memphis, TN 38101
(901) 525-5711
Price: $79.95

Fulmer's AF-40 EAGLE open-face helmet comes in Burgundy, Black and Carbon Silver colors; and Small, Medium, Large and Extra Large sizes. The shell is multi-layered aircraft-quality fiberglass with a five-snap design that accommodates a variety of faceshields and visors. An inner liner of polyurethane foam and an interior with a second foam lining, a neck roll and an extra-wide chin strap are added features. Brochure available.

Bell Helmets Inc.

15301 Shoemaker Ave.
Norwalk, CA 90650
(213) 921-9451
Price: $82.50

MAGNUM III by Bell is Snell 75 certified and DOT-approved for on-and off-road use. Its outer shell is hand-laminated five-layer fiberglass, and the inner liner is expanded polystyrene. Standard features include a padded brushed nylon interior and a five-snap Hallman-type visor with room underneath for most popular goggles. The fade-resistant urethane finish is available in white, yellow, silver or black; hat sizes are 6⅞ to 7⅝. Catalog available at Bell retail dealers.

Electro Helmets

Electrofilm Inc.
7116 Laurel Canyon Blvd.
North Hollywood, CA 91605
(213) 764-0200
Price: $94.95 to 112.95

The E-1 open-face helmet by Electro is constructed of five layers of hand-laminated fiberglass and features a fully padded interior of expanded polystyrene completely covered by continous-loop nylon fabric. The five-snap design allows use of most popular faceshields and visors, and a one-inch-wide strap is standard. The E-1 is Snell 75 approved, and is offered in hat sizes from 6⅞ to 7⅝. Colors are solid Radiants at $94.95; solid Metallics at $97.95; solid with multi-band side graphic at $107.95; and black or white with International side graphic at $112.95. Catalog available.

Fury Helmets

American Sports Co. Inc.
2970 E. Maria St.
Compton, CA 90221
(213) 636-9978
Price: $36.95

The Fury 300 Series of open-face helmets meet or exceed both the DOT and Snell 75 standards. Outer shell construction is of multiple-layer fiberglass, and the inner impact-absorbing liner is expanded polystyrene. The interior features nylon-tricot padded sides with a foam-padded crown piece. Color availability is blue, red, yellow, orange or black solids, and red, blue or silver metalflake; white only is $35.95. Sizes are Child's, Universal fit, plus Small through Extra Large. Catalog available.

Grant/LTC

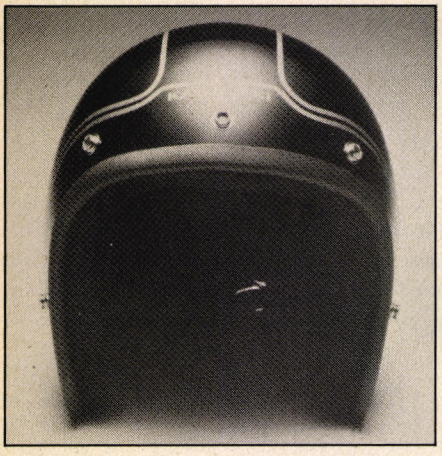
Land Tool Company
650 E. Gilbert St.
Wichita, KS 67211
(316) 265-5665
Price: $40.95 to 42.95

The Grant/LTC ADULT open-face polycarbonate helmet is offered in Child's and Universal-fit sizes, as well as Small, Medium, Large and Extra Large. Features include a "sure-grip" chin strap, a lightweight outer shell molded in one-piece GE *Lexan*, an impact-absorbing styrene inner liner and a foam-padded nylon interior. Solid color choices are white, black, yellow, orange and lime green. Candy apple colors, metalflake colors and custom painting are available at extra cost. Catalog available.

Griffin Corp.

P.O. Box 426
Andover, KS 67002
(800) 835-3200
Price: $32.50

Griffin's CANDY open-face helmets are offered in red, blue, orange, silver and gold candy colors, all with chrome outer trim. Features are a one-piece injection-molded polycarbonate shell, styrene inner liner and soft-nylon interior. A full line of Griffin flat, flip-up and bubble shields are available at extra cost. Sizes are Small, Medium, Large and Extra Large. Catalog N/A



Kawasaki Motors Corp.

2009 E. Edinger Ave.
Santa Ana, CA 92711
(714) 835-7000
Price: $43.95

The KAWASAKI open-face helmet is constructed of hand-laminated fiberglass, and features five faceshield/visor snaps and a rubberloc plastic edge trim. It is available in standard colors (white, blue, red or silver) and sizes (Small, Medium, Large or Extra Large.) The same helmet is offered in paint schemes that color-match all currently available Kawasaki street bikes for an added $7. Catalog and ordering information available through Kawasaki dealers.

KRW Helmets

American Sports Co. Inc.
2970 E. Maria St.
Compton, CA 90221
(213) 636-9978
Price: $74.95 to 110.95

The PREFERRED 2500 open-face helmet by KRW has an outer shell of multi-layer fiberglass and a one-piece impact-absorbing styrene inner liner. The padded brushed mizar interior features a neck roll, and exterior edges are beaded with rubber. Model 2500 is Snell 75 certified. Sizes are Small through Extra Large. The 2500 can be had color-matched to most popular models (pictured, $74.95); white, silver or black ($76.95); Universal Competition with hand-finished graphics ($97.95); and personalized with rider's name ($110.95). A Standard 2500 model is offered in white, red, blue or black, without neck roll and Snell 75 certified for $35.95. Catalog available.

Premier Helmets

1559 W. 135th St.
Gardena, CA 90249
(213) 515-5861
Price: $40.00 to 50.00

Premier model P1 open-face helmet is constructed of multi-layered, hand-crafted fiberglass, and features an inner liner of expanded polystyrene with either a brushed or tricot nylon interior. Offered in five sizes, from Extra Small to Extra Large, and in six solid colors, the P1 affords a full 120 degrees of peripheral vision and weighs 2½ pounds. Combination colors and designs are available at extra cost, and optional accessories include visors and flat shields in clear, smoke or amber. Catalog available.

OPEN-FACE

Shoei Helmets

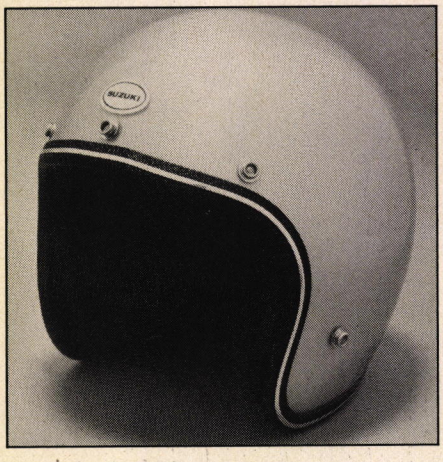
1717 Pontius Ave.
Los Angeles, CA 90025
(213) 477-6051
Price: $73.00

The S-22 is one of three Shoei open-face helmets that meet or exceed the Snell 75 standards. Outer shell construction is all fiberglass, and the inner liner is formed of high-impact non-resilient styrofoam. A brushed nylon-covered foam padded interior and rubber outer trim are additional features. With a front opening allowing 120-degree peripheral vision, the S-22 is compatible with glasses, and the five-snap design will accept most popular faceshields and visors. Sizes are Extra Small through Extra Large; colors are white, blue, red, silver, yellow or black. Catalog available.

U.S. Suzuki Motor Corp.

13767 Freeway Dr.
Santa Fe Springs, CA 90670
(213) 921-4461
Price: $59.95

The Suzuki COMPETITION helmet meets or exceeds Snell 75 standards, and is constructed of a multi-layer fiberglass shell with an inner liner of impact-absorbing expanded polystyrene. Comfort features are a fully padded brushed-nylon interior and a soft neck roll. Outer trim is of natural rubber. Color choice is Competition Yellow only, and a three-tone blue Team Suzuki racing stripe graphic is standard. Sizes are Small through Extra Large. Available at Suzuki dealers.



U.S. Suzuki

Price: $23.00 to 25.50

Suzuki's PERFORMER open-face helmet is constructed of one-piece molded polycarbonate with an inner liner of expanded polystyrene. A padded Trylon interior and a "sure-grip" chin strap are added features, and the five-snap design accommodates a number of faceshield and visor accessories. Colors are white, yellow or black ($23.00); and Candy Red, Candy Blue or Candy Silver ($25.50). Sizes are Small through Extra Large. Available at local Suzuki dealers.

Yamaha Parts Distributors, Inc.

6555 Katella Ave.
Cypress, CA 90630
(714) 761-7300
Price: $74.95 Full-face
$54.95 Open-face

The Yamaha DT Series helmets come in both full- or open-face styles. All DT Series helmets are made of multi-layer fiberglass, with polyurethane foam liners and interiors of Trylon fabric that is fully padded. Size availability includes Small, Medium, Large and Extra Large, and a Children's size is offered in the open-face style. Colors are white, red, yellow, silver or black; Children's color is yellow only. All paints are electrostatically applied, with a clear top coat to protect the color and seal in the graphic design. Available through Yamaha dealers.

SPORT LINES

Cycle Guide's True Tales of Race Courses, Dark Horses and Machines at Speed

EDITED BY DAIN GINGERELLI

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National Champions Are Made Outdoors

Looking closer at the new breed of motocross winners.

• The real action in American motocross is outdoors, make no mistake about it. The AMA national championships are contested outdoors and the factory proving grounds are outdoors. And as the athletes tell it, the most challenging motocross test occurs outdoors.

Stadium racing (aka Supercross) has made undeniable inroads into the American motoculture, largely as a result of AMA and factory recognition of its potent PR potential. But there is evidence that audience support for the venue is shaky as it exists in the present Barnum and Bailey-type form. "I think stadiumcross promoters overextended themselves with too many races, too many doubleheaders this year," says Gunnar Lindstrom, the Honda racing team manager. His counterpart at Suzuki, Mark Blackwell, agrees. "Attendance was down indoors this year and up outdoors."

Kent Howerton, winner of the AMA 250cc championship in 1980—traditionally the first title to be decided each year—echoes the sentiments of most riders. He realizes the media importance of stadium racing but knows that the real contest is at the Nationals. "I'd really just rather ride outdoors," Howerton says, "because that's where you find out who's best." Chuck Sun, the 500cc champ, concurs: "I'd like to see the nationals regain their importance," he says. "The true physical and mental exertion of the sport exists there."

In any case, the 1980 National season was healthy and full of surprises. The Honda and Suzuki teams emerged as powers. Yamaha lost its stranglehold on American motocross while Kawasaki continued to flounder. Single-shock bikes are "in" and air-cooled bikes are "out." Injuries sidelined some stars, some new faces appeared, and all the riders—winners and losers—are now preparing for next year.

Most significant for the 1980 season has been the emergence of three new champions. While their backgrounds vary, together they represent a new mature outlook on motocross. And by taking a closer look at them in the next few pages and finding out what they think about becoming champions, we can assemble a position paper on the state of the sport.

Continued

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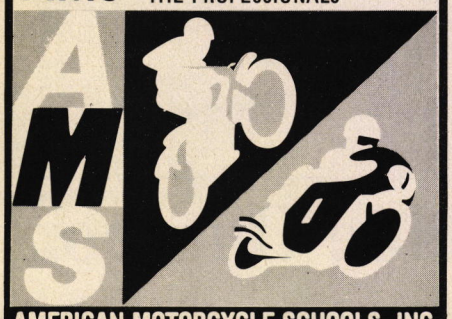

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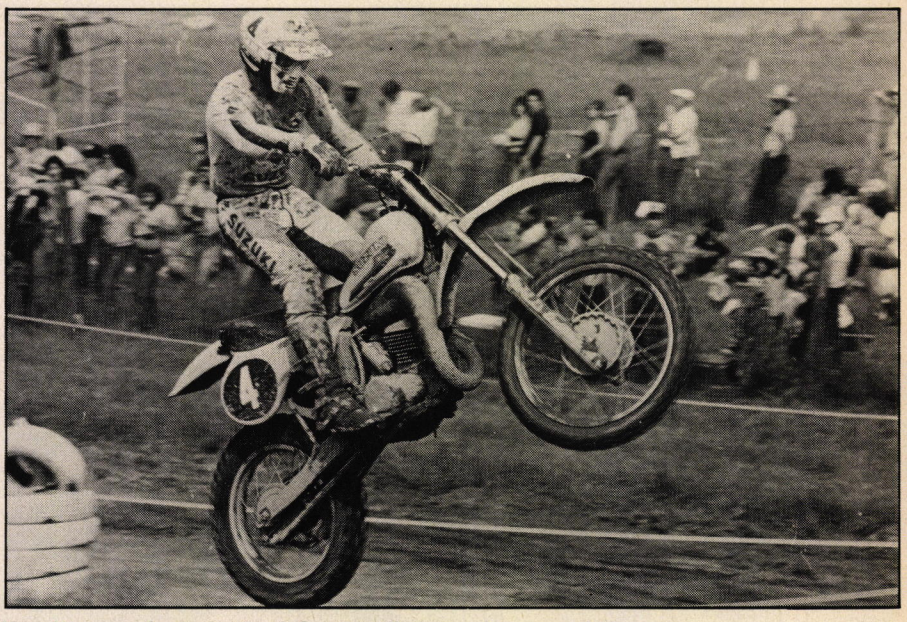
MOTOCROSS:

Kent Howerton

Emerging from Hannah's shadow.



PHOTOGRAPHY ©1980 JIM GIANATSIS

Kent Howerton's single-shock Suzuki sailed over the competition

Flying high towards new horizons—and his second AMA national championship.

• Kent Howerton bridges a gap that says a lot about motocross in America during the past decade. A professional since 1973, the 26-year-old Howerton won his first national championship in 1976 on an Open-class Husqvarna, also the last year a European marque won a U.S. MX title. He switched to Suzuki in 1978, joining the 250cc class. Following a series of reasonable results and one-year contracts, he emerged in 1980 with a devastating performance for his second national crown, and is now poised to sign the first long-term agreement of his career. "It's time," Howerton says, "I'm at the point where I need to plan for a future. I owe it to myself, and to my wife Jill, to come out of motocross with something."

Stability on the track has long been a Howerton hallmark: smooth, controlled, fast when he needs to be, Kent is a naturally-talented rider with a well-earned store of racing savvy. He trained hard for the '80 season, stayed healthy and his tuner, Greg Arnette, hit on the right engine and suspension combinations early. Howerton also didn't have Bob Hannah—who was home healing a broken leg—to disrupt his season.

Howerton addresses Hannah's absence candidly. "I think if Bob had been going he'd have certainly been my prime competition," he says. "But I was strong this year. And confident. I know I have more consistent speed than Bob, and—sure it's hypothetical—I think I still would have won had he been out there."

Mark Blackwell, the Suzuki team manager, elaborates: "Kent is so talented, has so much confidence, that we knew he'd win if he stayed healthy. You know he beat Bob three times late last year, and then finished the season by winning the Trans-USA, the Anaheim stadium-cross and the Superbikers. That changed Kent, brought him to a new point in his career. Mentally, Kent's not just a 'top five' rider anymore—he's a winner."

Win he did and in a big way, too: ten firsts, three seconds and one third in the 14-moto, 7-race 250cc series. Hannah or not, Howerton proved himself against the field.

As for his racing future, Howerton's goals are "to win as much as I can as long as I can. My determination and ability have carried me so far," he allows, "and now my experience is being factored in.

"Every year I have a better idea of what my capabilities are," Howerton says, "and I believe my horizons are still in front of me. I don't think I've reached my potential." —*Jeff Burtt*

Howerton and wife Jill

Behind every successful man. . . .

Chuck Sun

There's more to winning than first place.

• "What does the championship mean to me? It's a nice feeling, but it's no big deal," said an introspective Chuck Sun shortly after becoming Honda's first national titleholder since 1977. Sun, the thinking man's motocrosser, is an even-keel individual whose approach to life complements a trackside personality that is analytical, well-prepared and in control.

His team manager, Gunnar Lindstrom, says about Sun, "Chuck is a technical rider, and a thinker. He doesn't ride any harder to win than he has to; he saves his strength for when he needs it." Lindstrom, a former GP and Trans-AMA competitor himself, admires one facet of Sun's racing personna in particular: "He's a strategist," Gunnar says bluntly. "He compensates and solves problems on the racetrack. He's not a power rider, like Rick Burgett or maybe Danny LaPorte, but Chuck's mental qualities, plus his natural talent are a tough combination to beat."

Indeed, they were in the 1980 Open-class series. To be sure, former 500 champs Burgett and LaPorte had equipment and physical problems at inopportune times. And the rest of the

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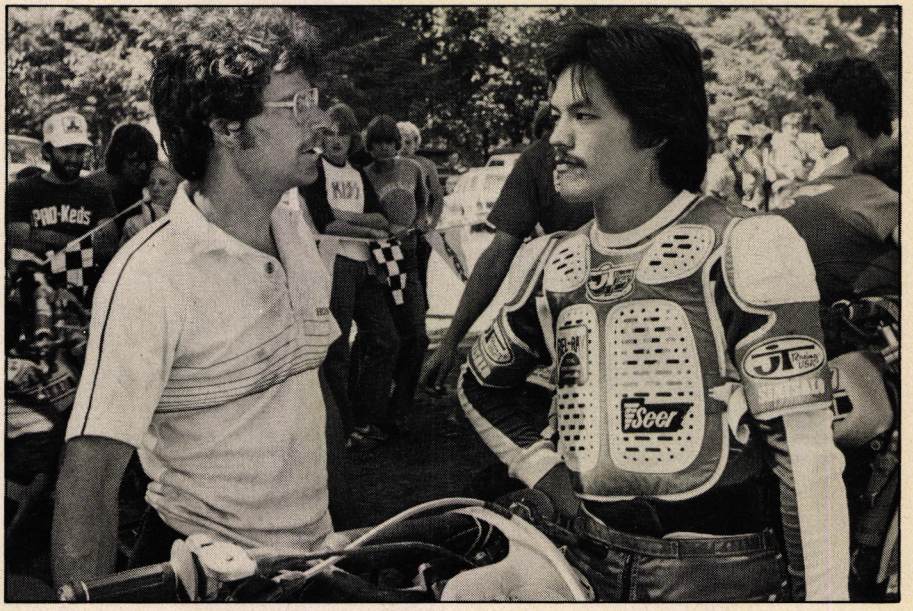

Chuck Sun and tuner Eric Crippa planning tactics before battle

A season filled with open warfare and introspection.

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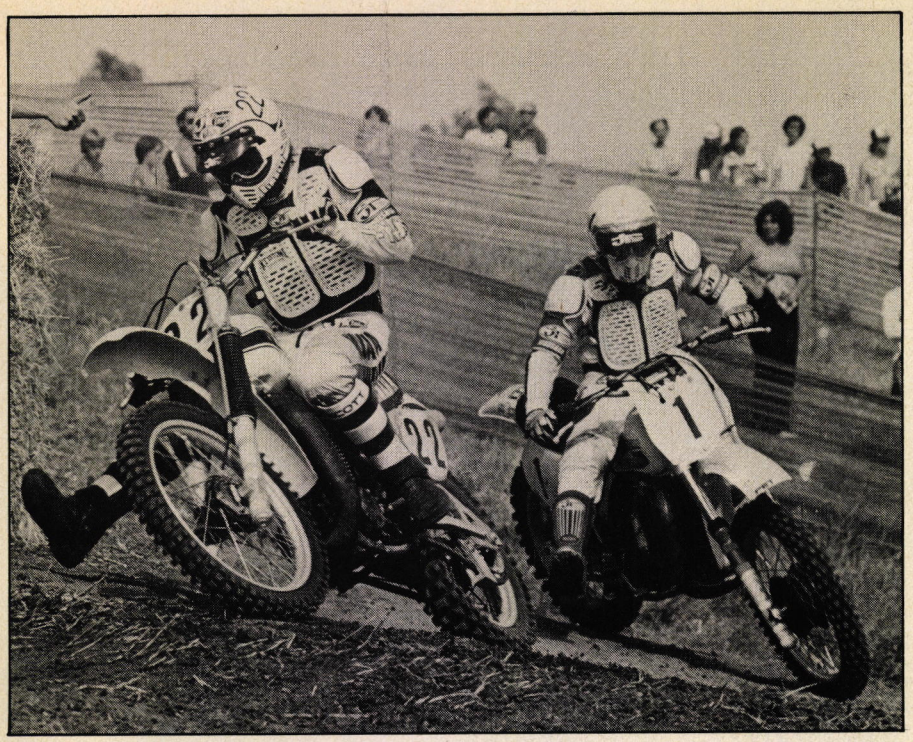

Rick Burgett (22) and Danny LaPorte (1)

Former champs wither under the Sun.

field sported an unlikely variety of new faces—Goat Breker, a talented youngster was second to Sun and Marty Moates, remember him?, tied for tenth. But in the final analysis, Chuck Sun won five of the seven races he competed in and handily capped the title with one round left on the calendar.

"I feel comfortable in the 500 class," Sun says. "I can relax, not work as hard as on the smaller bikes. It takes throttle control, a lot more technique, and I just felt confident all the way. The stage was set when I won the first race," he continues. "From then on it was up to me: If I screwed up it would be my fault. If I won, well, what did happen *should* have happened. Everybody got potshots at me at different times, and I raced them all when they were at their best at least once each, and I beat them.

"This is something I've been working on all my career," Sun adds, "but I think in many ways next year will be the toughest. I'm 24. I'm the champ, the guy to point for, the guy they expect to slide.

"More than anything, my main reason for being on earth is to become a better person. Part of that is becoming a better rider as long as I'm able, but whether I win or lose isn't really important. It's *how* I win or lose, how I take it personally, that means something. It's easy to win. It's tougher to lose." —*Jeff Burtt*

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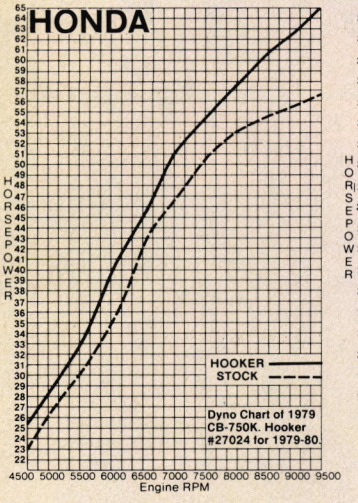

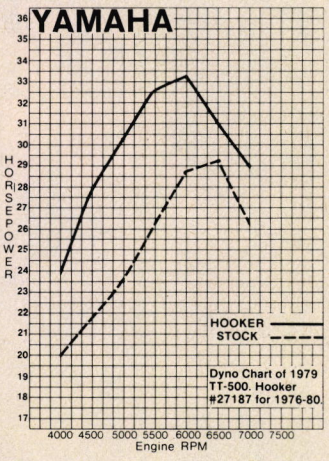

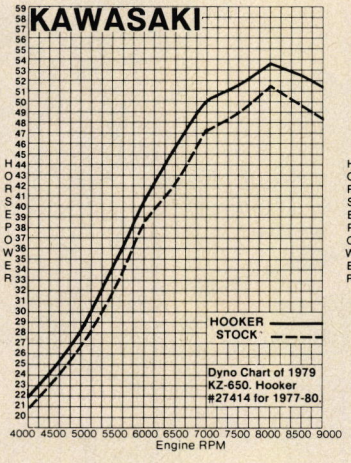

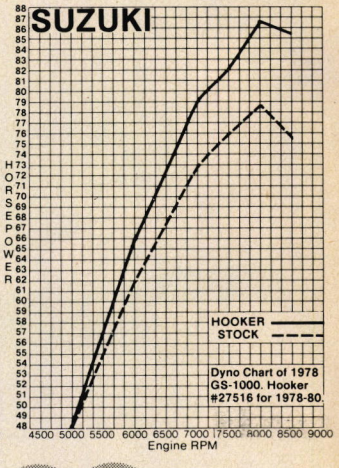

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Mark Barnett

Riding straight ahead.

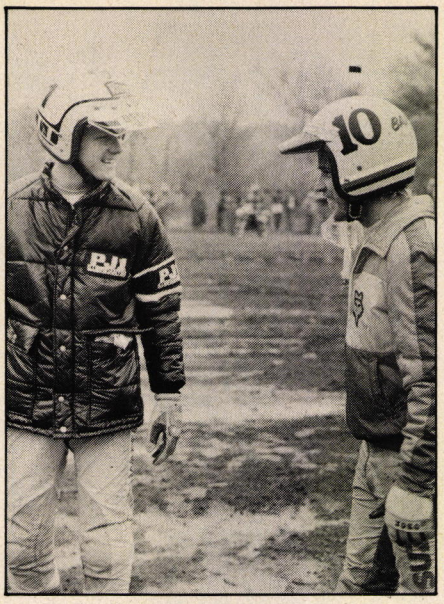
• "It seems like when you get the championship, people are different around you—some of them anyway," said Mark Barnett after winning the 125cc title. Just turned 20, Barnett is growing up fast, yet he says, "But I don't think the championship's changed me."

Barnett is a power rider with a fierce will to win, a late-lap charger who pursues victory with the tenacity of a bloodhound. For three years he's stalked Broc Glover's Yamaha in quest of an elusive 125 crown. This year he finally piloted his Suzuki to the title, but Glover fought him all the way and the championship wasn't decided until the last moto of the last race under a searing Florida summer sun.

"It felt better beating him at the end, rather than him DNFing," says Barnett. "I had to prove something; people said I can win races but not championships. Well, now I know I can do both."

Barnett is perhaps the strongest athlete on the national tour. "I *like* to work out," he insists, "I have weights at home, and when I go to California, I do the Nautilus machine. You know a really fun workout, though? Hauling hay in Alabama in the summertime; *that* puts me in shape. I like it when it gets hot. The hotter the weather and the bumpier the track—that's the way I like it."

Barnett lives on his grandmother's 400-acre farm, and has built his own track in the front yard. His tractor was purchased with bonus money from the 1979 season, and this year's championship bonus went towards 26 head of cattle. Off-track, Barnett is quiet, polite and completely without guile. He retreats to the farm after each race, avoiding the Turbo-Carrera-and-Led Zeppelin life that some motostars lead. He eats fresh vegetables from his garden, works hard and rides his practice track.



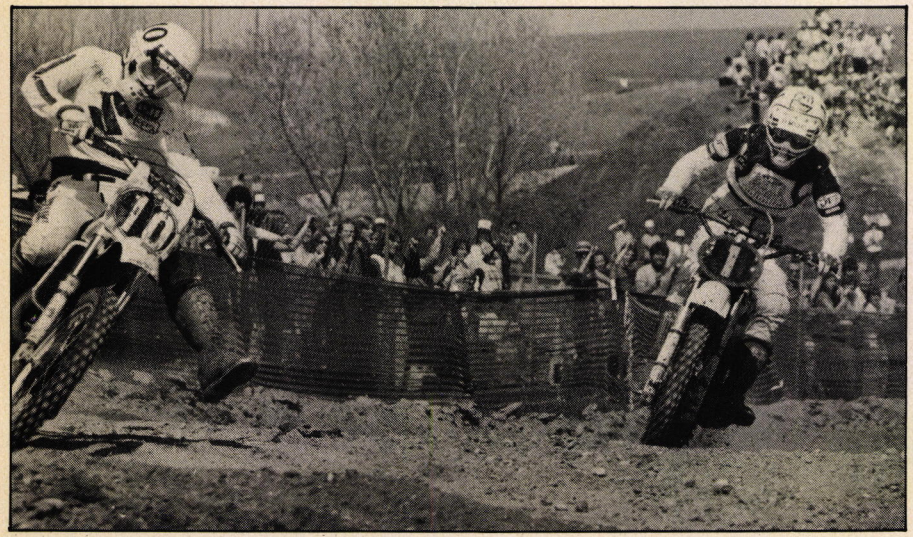
Adversaries Glover and Barnett

All smiles for the cameras.

He puts much of the reason for his success, however, at the feet of Blackwell. "Mark Blackwell has taught me so much," says Barnett. "He can point out things that you don't know, tell you what you're doing, tell you what to watch out for on the track. It kinda gets you excited when you come in from the racetrack and he tells you you're looking good out there."

Barnett's future plans are enviable, considering his youth. "I'd like to have a shot at the world championship, and I'd like to win the Supercross series. I figure to work real hard right now, stay healthy, manage my money right—and when I get to be 30 I won't have to worry."

—Jeff Burtt



Barnett on the wide line, while the former champ plays his cards in close

No. 10 gets to wear the No. 1 plate this time.

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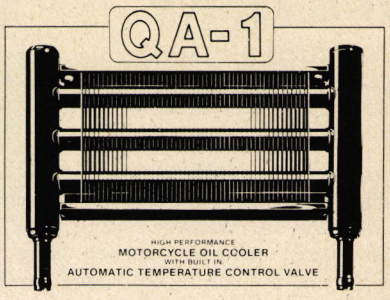

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FLATTRACK:

Jim Felice

Yamaha's latest blue-chip racer.

• Yamaha officially cashed in its chips and pulled out of AMA Class C racing at the conclusion of the 1977 season. The reason: The XS650-based racer wasn't competitive against the Harleys. Even so, Yamaha hasn't forsaken Class C, and has invested in the future by sponsoring Jim Felice, now a first-year expert.

This isn't the first time Yamaha has groomed a racer for the future. From Kenny Roberts' beginning as an AMA expert in 1972, Yamaha took him under its corporate wing as an investment for a later date. The pay-off came the following year when KR won his first of two AMA Grand National championships—a first for Yamaha or any other Japanese motorcycle company. The pay-back continued from the Roberts stock when he won the 500cc world championship in 1978—again a first for a Yamaha-supported rider.

Felice shares more than just the same team colors as Roberts. Both served their apprenticeships on the clay ovals of northern California, winning a fair share of races in the process.

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Roberts tutors Felice in the pits

Schoolday at Laguna Seca.

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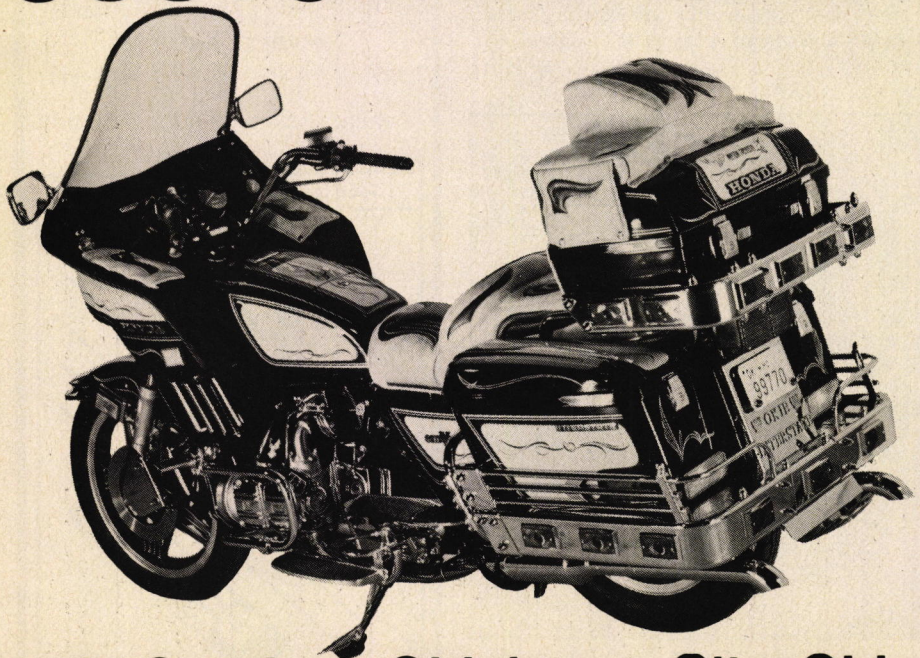

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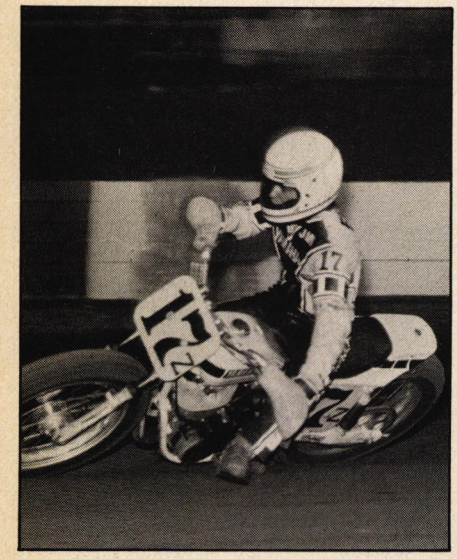
As an AMA junior last season, Felice had good success aboard the Mert Lawwill-prepared, Yamaha-backed TT500 single at half-mile and TT races.

How far Yamaha is willing to support Felice, though, remains unclear, since the factory spent substantial money in the Seventies grooming Randy Mamola only to lose him to Suzuki last season. As Ken Clark says about Felice and his involvement with Yamaha: "We sponsor him essentially for half-mile and TT, but as far as his future with us, I don't know right now. It largely depends on what the factory decides."

Yamaha probably won't let Felice slip out of its hands, though, especially since he shows promise at roadracing, too. He rode a TZ250 sporting factory paint at the Laguna Seca novice race last summer, and even though he crashed in the main event, he looked promising. Perhaps even more beneficial to Yamaha's racing stock growth was that Felice pitted with Roberts at Laguna Seca for trackside tutoring.

Felice seems the most optimistic of anyone about his roadracing: "I'd like to race one of these bikes in Europe—or here. I roadrace to keep an edge on my dirt racing—plus, a complete motorcycle racer has to do well on both dirt and pavement."



Felice feeling at home on the oval

A vee-twin in his future?

It appears, then, that Felice plans to continue Class C flattrack, especially since there are rumors of Yamaha returning to the Winston Pro Series with its new 750 V-twin. Yamaha's logical choice for a rider is Felice. And just to spice up the team, don't forget that Roberts has expressed interest in returning to the clay ovals himself for occasional bouts with the overpowering Harleys. In any case, Yamaha stock should surely pay worthwhile dividends this year, both at home and abroad.

—Patrick Behar

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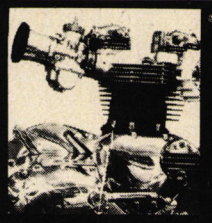

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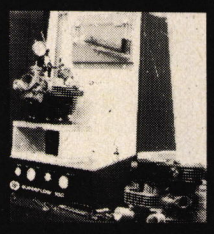

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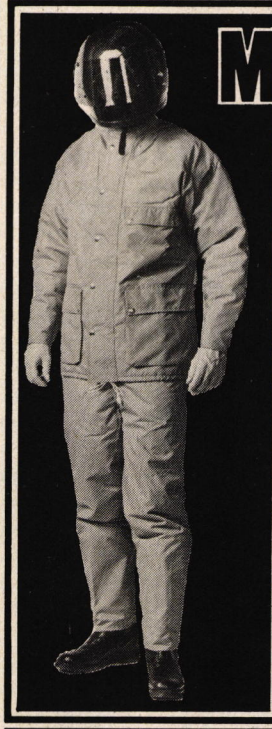

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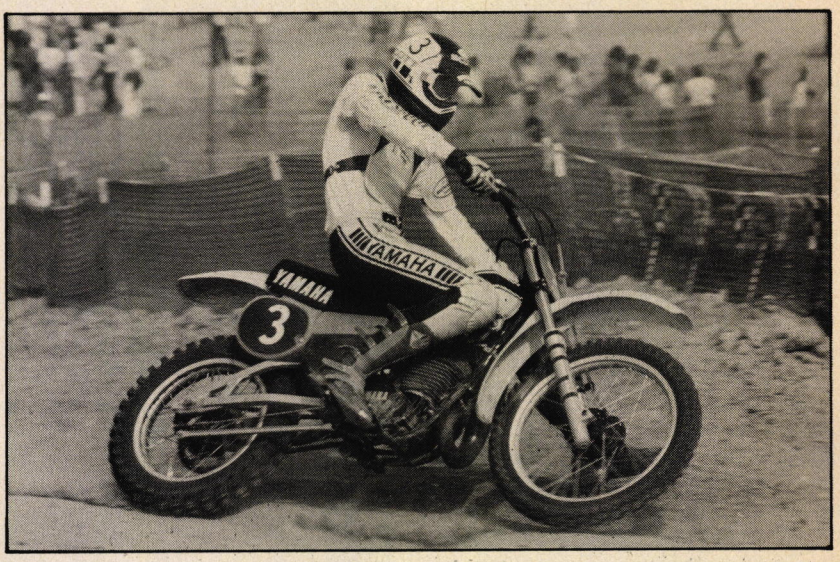

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Motocross des Nations absentee Bell

Please excuse Mike from racing today.

• America missed the best chance yet of winning the annual **Motocross des Nations.** The U.S. team included Brad Lackey, Chuck Sun, Kent Howerton and Mike Bell. Unfortunately, the stellar quartet never made it to England for the international confrontation, mainly by reason of factory obligations: as it turned out, only **Howerton** had a written note pinned to his chest protector saying it was okay to compete. Since the talent-laden team suddenly became diluted with no-shows, the AMA withdrew the entry. The Belgian team, led by 500cc world champ Andre Malherbe, won.

• Former 500cc world champ Graham **Noyce** failed to keep an appointment with **Suzuki** officials this summer and consequently lost any chance of signing with them for 1981. As it turned out, Noyce will remain with Honda, in all likelihood to ride a 500 alongside Malherbe.

• In other international motocross news, Andre Vromans reportedly signed a three-year contract with Yamaha, and will team with Hakan Carlqvist in the 500cc class. There appears to be no moss growing under Gerrit Wolsink's feet, either, even though Maico dropped him at the end of the season. Evidently, **Kawasaki** signed the five-time USGP champ, cutting a tutorial deal similar to what Roger **DeCoster** had with Honda last year. If that's the case, and Brad Lackey remains with the Green Machine, this could be the year the bearded American moves into the half-liter driver's seat.

• Anton Mang, the new 250cc roadrace champ, had no problem landing a factory ride with Kawasaki for next year. Mang, aboard his Krauser-sponsored KR250, blew Kawasaki's two-time champ, Kork **Ballington,** off the 250 throne this year. Reportedly, Mang will have a 350 to ride, too. The Big K hasn't lost faith in Ballington, though. He will remain with the team, more than likely manning the second 250 entry, and flying wing for Gregg Hansford on the 500cc squad. It's no surprise Kawasaki bolstered the 250 team with Mang and Ballington, since rumors echo from the **Yamaha** camp of a **rotary-valve** inline twin to replace the aging and slow TZ250.

• Yamaha is concerned with more than just an inline 250 for roadracing. How about a field of 20 specially prepared **RD350 LCs** to get your race juices flowing? Basically, Yamaha wants to support a **Pro/Am series** in which 10 selected professionals are pitted against 10 invited amateurs. The series, if in fact it evolves, will be sponsored by Marlboro cigarettes, and all 20 bikes will be maintained and prepped by Yamaha. And like the RD350LC, the races will be in Europe only—specifically England. Which is too bad for all you AFM, ARRA, WERA and AMRRA non-pro go-fasts.

• One Yank who is riding and with great success in England is Californian Randy **Mamola.** He cashed in his chips first at the British GP this summer, capped the Mallory Park Race of the Year and locked up the Donington World of Sport Superbike race, too. His only embarrassing moment came in the first race of the Donington WSS event, when he crossed the finish line with the RG500's front wheel airborne, lost control and **crashed.** The only injury was to Mamola's pride, not to mention the dent it put in Suzuki's budget to replace the **burnt** single-shock RG.

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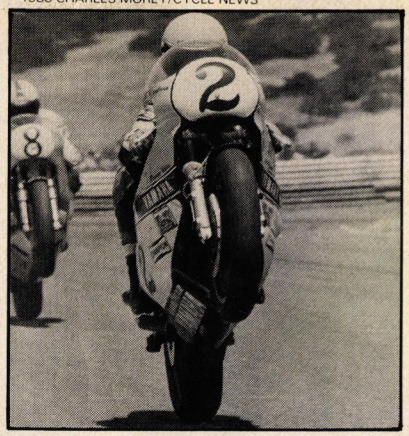

Roberts/Spencer moto-ballet

Wheelies 'R Us.

• While wheelie contests are the order of the day, fans at the Laguna Seca roadrace witnessed one of the best one-wheel duels yet. It pitted Kenny **Roberts** and his YZR500 against 19-year old Fast Freddie **Spencer** aboard his Erv Kanemoto-tuned TZ750. Although there's no way to officially determine who pulled the **longest wheel-stander,** it is certain the spectators won because of the race-long show. However, Roberts almost lost control on the victory lap, and had to plant a foot on the pavement to help straighten things out. And during the race, Ken Clark was overheard to confide in Kel Carruthers, "I wish he'd quit _____ing around and get to racing." Roberts reply to the press after he won his 29th AMA race—a record—was: "It's show business. They want to see a wheelie, so I give it to 'em."

• Winston Pro Series crowds can get ready for an updated, enlarged version of the flat-track Honda **CX500** for 1981. According to John Kite, creator of the first Honda vee-twin oval racer, plans call for a **750cc** version for the 1981 season. First-year expert Rich King is scheduled for the throttle-twisting duties. Says Kite about building the bike: "It's simple to do. **It just takes bucks.**" Hear that, Honda?

• And while discussing next year's crop of flattrackers, you have to wonder if **Yamaha** intends to enter its new 750 **vee-twin** in Class C competition. After all, Mert Lawwill, who prepared Kenny Roberts' bikes for the Houston Astrodome double header last February, made a special trip to the Las Vegas introduction. He and Roberts were seen more than once making eyeball measurements of the chassis and engine. To add fuel to the fire, **Roberts'** manager, Gary Howard, says KR is itching to get back **into roundy-round** racing. Says Howard, "He's definitely talked about combining Class C with European road racing, but with 15 European races, it's going to make it very difficult." Howard added with a chuckle, "It was appealing to Kenny to accomplish both titles." •

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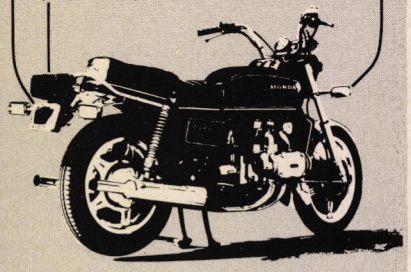

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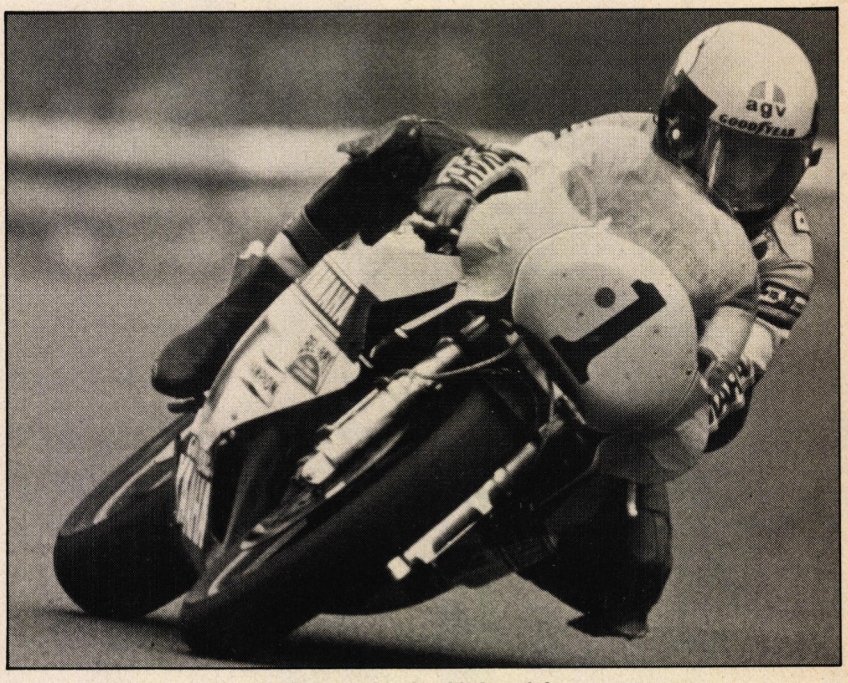
Winners & Losers

Roberts Does The Hat Trick

He's still King, but not by as much.



The No. 1 plate is retained by Roberts for the third straight year

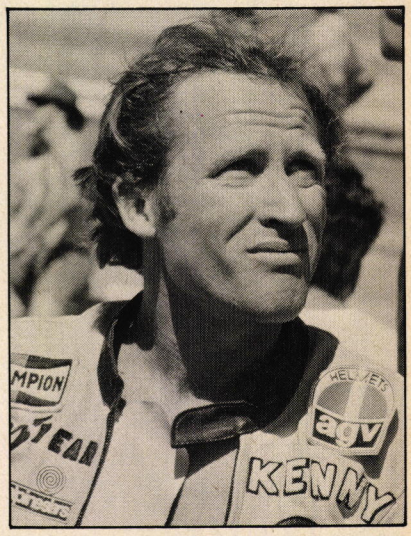
And with more competition, there seemed to be more to the prize.

• Word was out at the beginning of this GP season: Kenny Roberts would be practically unstoppable. With Barry Sheene no longer on the Suzuki team, and Virginio Ferrari without an RG500 because of sponsorship disputes, it appeared that there was no one capable of preventing KR from taking his third straight championship.

Well, he made the hat trick. Not since Giacomo Agostini strung together seven 500cc world championships has any one rider so thoroughly dominated the premier class of motorcycle roadracing.

But the second half of the 1980 season caught Roberts' draft. After winning the first three races of the season, Roberts lost the edge to overpower the rest of the field. Subsequently, his best finish was a second at Silverstone. The pressure of being top banana in a class that suddenly became competitive again took the edge off his approach to racing. In the past, Roberts never settled for anything less than first place. He even stated in 1978 that he didn't want to race cars because of the increased difficulty in passing slower competition. "The thing that bothers me about cars," said a confident Roberts in 1978, "is inability to pass—you have no room, the tires are so wide. They're like slot cars, and I can't sit around in second place."

Roberts seems to have mellowed out a little since then. For instance, heading into the final race of the season he held a 13-point lead over Randy Mamola. In search of the necessary three points to clinch the title, Roberts evaded the first-place issue, and instead set his sights on finishing ninth or better. He motored around the Nur-



Kenny Roberts—three titles later

Perhaps seeking divine intervention.

burgring at the German GP, taking fourth—and the title. His statement after the race gave a clearer indication of how much pressure he was under to keep the championship out of Mamola's hands: "I just feel relieved. The pressure was greater this year than ever before." Hardly the kind of statement you'd expect from someone who didn't want to settle for second place.

At 28 years old—an age considered beyond the prime by some—it appears that Roberts is looking over his shoulder. He saluted 19-year old Freddie Spencer after the Laguna Seca roadrace, heralding him as the new young lion of American roadracing. He had even higher praise for fellow Californian Randy Mamola, who didn't race at Seca because Suzuki team officials wanted him fresh for the two remaining world championship races, where he had an outside chance of catching Roberts in the points battle. Mamola was as hot as the August summer they were heading into, and Roberts knew it. "I'm glad Mamola wasn't here today," said a relaxed and relieved Roberts in the Laguna Seca press room after the race, "He could have probably beaten me."

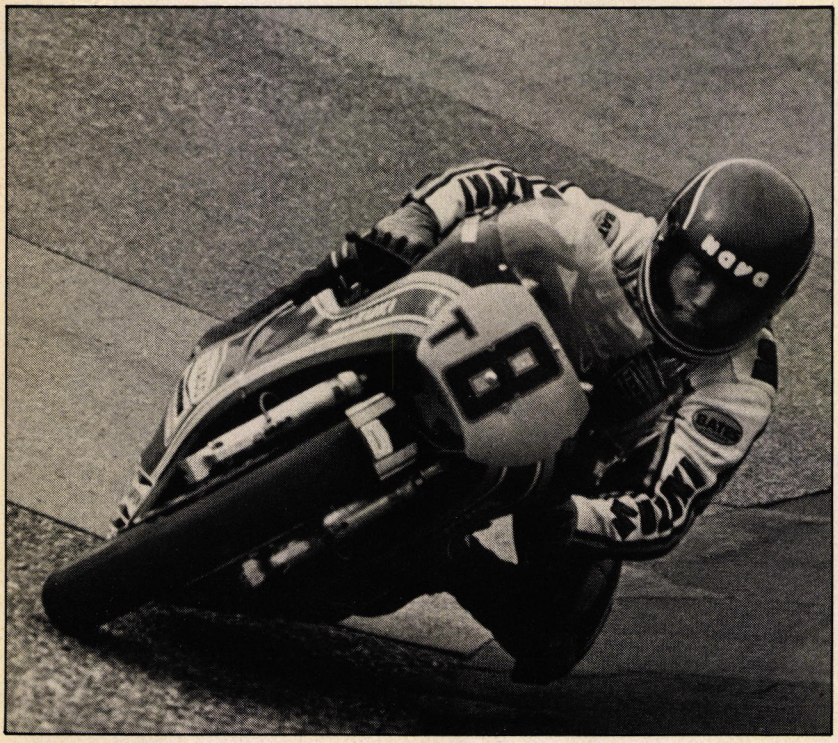
Two weeks later, Mamola did just that. After setting the fastest qualifying time for the British GP at Silverstone, he went on to win, with Roberts second. And in the German GP, the freckled-faced Suzuki rider again started from the pole. His early race lead was cut short by a broken oil seal, and when Roberts passed him for fourth the third world title became a gift.

Roberts hasn't had as much help as you'd expect from Yamaha, though. While Suzuki floods the field with team riders, Roberts has only himself as wingman. It's not only burning out Roberts, it also cost Yamaha the manufacturer's title, because Suzuki won its sixth straight cup by drawing on a combined effort of a half-dozen or so riders.

Further diminishing Roberts' dominance of the 500 GP field is the reemergence of Michelin and Dunlop tire technology. Two years ago Roberts scoffed at Michelin's efforts to match his Goodyear grip, and there was never mention of Dunlop at all in the 500cc pits. Things were different this season, especially with the sudden stickiness Mamola found in his Dunlops.

What's evolved, then, is a 500cc class that has several rows of riders capable of winning. Even Roberts, who picked up the name King Kenny on his first sortie Over There, realizes the competitiveness on the grid each race: "Since the other riders were faster and their bikes much improved, I feel we accomplished more this year than 1978 or 1979."

Roberts survived the Suzuki-infested waters once again, but you have to wonder how much longer he can sustain the effort, especially operating as a one-man team. But for the winter, he's not going to concern himself with those matters. "Right now I'm just looking forward to a couple of weeks off. After vacation, I'll sit down and decide where I'd like to go next year." You can bet on one thing—this championship won't go to his head. —*Dain Gingerelli*



Mamola at the Nurburgring

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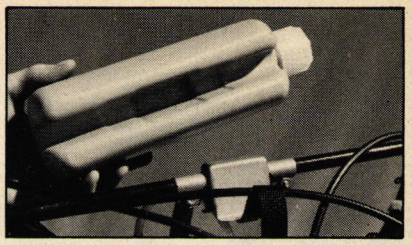

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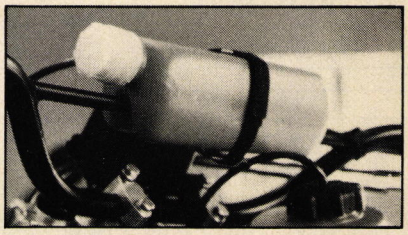

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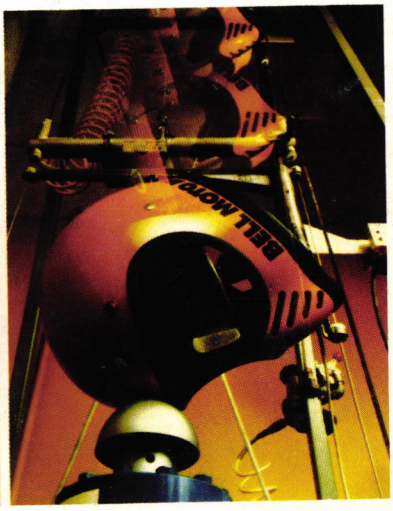

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